THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. XIII. Copyright, 1883, JAMES R. OSGOOD & Co., Boston, Mass. No. 391.

JUNE 23, 1883.

Entered at the Post-Office at Boston as second-class matter.

CONTENTS.

SUMMARY: —
Mr. Hill files his Reply. — The Fifteen per cent Contracts. — The New York Board of Health: New Rules concerning the Height of Tenement-Houses. — The Boston Foreign Exhibition. — The future Operations of the Archæological Institute of America. — The Timber-preserving Processes. — Preserving Vegetable Fabrics by Tanning. — The Cure of Defective Flues. 289
COMPETITION FOR A MECHANIC'S HOUSE. — THE JURY'S REPORT. 291
FROM BAYREUTH TO RATISBON. — VIII. 291
THE PREVENTION OF FIRES. — II. 293
THE ILLUSTRATIONS: —
Competitive Designs for a Mechanic's House. — The Fitch Institute Building, Buffalo, N. Y. — House at Washington, D. C. 294
THE MECHANIC'S HOUSE COMPETITION. — I. 294
STRAWBERRY HILL. 295
NATIONAL EXHIBITION OF RAILWAY APPLIANCES. 296
SANITARY PRECAUTIONS AFTER FLOODS. 297
COMMUNICATIONS: —
Double Thick Soil-pipe. — Glass Roof-Tiles. — Studies for Beginners. — "The Golden Bough." 297
NOTES AND CLIPPINGS. 298

THE reply of the Supervising Architect of the Treasury Department to the most definite of the accusations made against him has been filed, and contains a simple statement of facts which every one but his assailants knew all about before. From the mass of assertions, more or less wild, which have been made since the investigation began, his counsel succeeded in separating one which showed a semblance of definiteness and common-sense, and requested leave to reply to it by itself, instead of being compelled to beat the air in vain efforts to reach all the phantoms of the accusers' imaginations. The specification selected was that charging the government architect with paying more than the market price for the stone-work of the Philadelphia Post-Office, and was supported by the testimony of a former attaché of the architect's office, who was employed to make measurements and estimates for the purpose, and of a stone-cutter, who compared the wages which he received for doing certain portions of the work with the prices which he asserted to have been paid to the contractors who employed him, and which certainly indicated that they received a handsome profit. To these representations the reply is made that the Government undoubtedly paid a large, even an exorbitant price for the stone-work of the public buildings generally, which were in process of erection at the beginning of the present administration of the architect's office, but it is also asserted, and can be readily shown, that the work for which the exorbitant prices were paid was executed under contracts entered into under a previous administration, which allowed the contractors a still larger profit, and were modified in the interest of economy by the strenuous efforts of the present architect, who, although hampered by the acts of the very one who has until recently been most active against him, succeeded in obtaining a reduction of cost which was probably as large as could have been secured without changing the color of the stone, and the style of cutting, in buildings whose exterior was already about three-fourths done.

THE nature of the saving made by the modification of the Government stone contracts may be surmised by referring to the printed report of the evidence taken in regard to these same contracts some years ago. Under the original agreements, made at the instance of the first Supervising Architect of the Treasury Department, certain dealers were employed to furnish stone, at a given price per cubic foot; and in addition to this, to provide tools and plant, and hire workmen, all of which were to be paid for by the Government, while they were to receive for themselves fifteen per cent on the whole expenditure, as compensation for their trouble. Such contracts as this might not be objectionable in the case of a private proprietor, but as carried out on behalf of the Government they became a mere cover for scandalous robbery of the public treasury. We have heard the story of the contractor in Maine who employed apprentices for a small sum, and charged them to the Government as skilled stone-cutters at the highest rate of wages, appropriating to himself the difference, together with fifteen per cent commission on the amount of his theft; and there were many similar cases. In one instance, the stone supplied by the contractor was of bad quality, being full of spots and stains; but his men were immediately set at work in repairing its deficiencies by neatly chiselling out the spots, and fitting in small patches of the same stone; the Government paying the entire cost of this novel mode of improving the quality of material, while the contractor received fifteen per cent on the cost of renovation for his ingenuity. If we remember rightly, a single stone in the Chicago Custom-House, one of many, is still to be seen adorned with twenty-two patches, as a costly memorial of the advantages (to the contractor) of the percentage system; and so widely distributed, and so rich, were the profits arising from it, that a long struggle was necessary before it could be overthrown. Even now, it is thought that the attack upon the Government architect may have as one of its objects the restoration of this system, and the suggestion derives some color from the fact that it was at first most energetically pressed by the person originally instrumental in its adoption. If there is anything more than plausibility in the idea, it is fortunate that the attack is not likely to succeed.

AS many of our readers know, the laws of New York regulate very strictly the arrangement of tenement-houses, and prescribe the exact proportion of the lots on which such buildings stand which may be covered by the structure, without diminishing too much the space to be reserved for light and air. It has become so common of late, however, to build tenement-houses of great height, that a modification of the old rules seems desirable, and with the usual wise caution of the New York Board of Health, a circular, presenting the rules in relation to the matter which the Board has now under favorable consideration, was recently sent to the architects and builders of the city for their consideration and criticism. The proposed rules are very simple, and provide merely that tenement or apartment-houses not more than five stories in height may cover seventy-eight per cent of the lot; while those six stories in height must not cover more than seventy-five per cent; seven-story buildings not more than seventy per cent; and those of eight or more stories not over sixty-five per cent. In the case of corner lots, which are of course excepted from the operation of these rules, the only restriction is that where the buildings erected upon them are more than eight stories high, a clear, open space ten feet in width must be left at the rear of the lot. The object of this is of course to provide for a circulation of air through the interior of the blocks, the importance of which seems to be more fully appreciated in New York than elsewhere. One can hardly help wishing that the Board might have the courage to carry the same principle one step farther, and prohibit the introduction, in buildings of this class, of any enclosed shaft whatever; compelling owners to light all bath-rooms and inferior offices, if not directly from the outside, at least from shafts open to the exterior at the top and bottom, so as to be continually swept by a current of fresh air. Some of the best of the recent apartment-houses have been already so arranged, but in others, perhaps the loftiest and most costly ones, bath-rooms, pantries, and even chambers are planned to open upon wells, closed at the foot, and containing an almost stagnant column of air, which, as soon as the building is fully occupied, is poisoned by the fumes from six or eight, or even in the new ten or twelve-story structures, from twenty or thirty superposed kitchens, slop-sinks and water-closets. The ventilators usually put in the skylights at the top of such shafts do little to improve the condition of the air in them, and nothing short of openings at each end, large enough to secure the rapid movement of the whole of the included atmosphere, can make them even tolerably safe outlets, to say nothing of inlets, for the air of sleeping rooms. In Paris, where interior courts, although much used, are generally larger and more open than with us, the unwholesomeness of the air contained in them is just now attracting serious attention, and their construction will probably be regulated before long by stringent laws, and if Paris, which has no very high reputation for healthfulness to maintain, finds it necessary to modify the present system by force in favor of the poorer classes, the officials of New York, in which vast apartment-houses are as yet intended mainly for those who can

well afford to pay for the preservation of their health, should certainly not fail to seize the opportunity for compelling now the adoption in such buildings of a high standard, the value of which will be felt for generations hence by all portions of the community.

THE prospects of the Boston Foreign Exhibition seem to brighten as the time for it approaches. So many applications for space have been received that it has been found necessary to add about one-fourth to the available area of the great building of the Massachusetts Charitable Mechanic Association by constructing a temporary extension, two hundred feet or more in length. This extension, although intended only for a few months' use, is to be built entirely of fire-proof materials, and devoted to the exhibits of fine arts, leaving the main building, which, although very substantial, is not fire-proof, for the displays of miscellaneous articles. The French Government seems to have courteously interested itself in the exhibition, and specimens of the Gobelins tapestry and porcelain from Sèvres will be shown, as well as some pictures from the galleries of the Luxembourg. Italy, as was originally announced, will send a large and interesting collection, secured in a great degree through the efforts of Mr. James Jackson Jarves. Among the minor features of the exhibition will be a number of characteristic restaurants of various countries. In the Persian department, which is to be one of the largest and most interesting of all, will be an Arab tent, where Mocha coffee will be served by Arab waiters. The Japanese exhibit will comprise a tea-house, with Japanese women as waiters; and German and French restaurants, as well as an English chop-house, will be attached to their respective departments.

A PRESSING, and as we hope, convincing appeal has been made by certain New York members of the Archæological Institute of America to the enlightened citizens of that place for aid in raising funds for the prosecution of the explorations in classical countries so auspiciously begun at Assos. The total cost of such work as that which was carried out with so much intelligence and success by the Assos expedition has been and will probably be for the future, only about sixty-five hundred dollars a year, and important as the results of the first expedition have been to the learned, it is probable that in many places discoveries are awaiting the energetic explorer which would appeal more strongly to the imagination than any yet announced. It is by no means decided where operations will be commenced, in case the money is raised, but the ruins of Cyrene in Africa, Sybaris in Italy, and several towns in Crete, are suggested. Of these Cyrene would be on some accounts the most available, the site being elevated and salubrious, while many remains of temples and other buildings, and countless tombs, are still visible above ground. It would, however, having been continuously occupied and plundered by Persians, Egyptians, Greeks, Romans, Saracens and Arabs to our own day, lack something of the romantic interest which attaches to the name of Sybaris, the city whose wealth and luxury has been a proverb for nearly thirty centuries, and which, at the height of its prosperity, was taken by its enemies and buried, by turning the course of the river Crathis through it, in the mud which has lain undisturbed upon it for twenty-four hundred years. Unfortunately, the marsh under which Sybaris lies entombed is of the most malarious character, and the fevers of southern Italy are not to be rashly braved, even for the sake of disinterring a city, so that if the task is undertaken, it must necessarily be pursued with great caution.

A CIRCULAR sent out by the American Society of Civil Engineers calls attention to the fact that the National Exposition of Railway Appliances at Chicago contains a large number of specimens of wood, treated with various preservative applications, and collected by the committee of the Society appointed about four years ago to report upon the preservation of timber. The committee has not yet finished its labors, but it is expected that the final report will be made this year, and in view of the great and increasing importance of the subject this will be awaited with much interest. Of the processes in commercial use for timber preservation the three principal ones are those called kyanizing, which consists in impregnating it with bichloride of mercury; burnettizing, in which chloride of zinc is used instead of the mercurial salt; and creosoting, in which the oil of creosote obtained from tar is the antiseptic agent. The cheapest of the three processes is the burnettizing, which adds about five dollars per thousand feet, board measure, to the cost of the lumber, and may be depended upon at least to double its durability, in dry situations. The results of kyanizing are very similar to those of the other process, but the cost is about one-fifth greater. Creosoting, which the committee regards as the most effective process of the three, costs in this country from twelve to twenty dollars per thousand feet of lumber. It is thus almost too expensive for ordinary work, but serves well for piles and bridge timbers exposed to the attacks of the teredo, which will not touch the creosoted wood, although it attacks timbers treated by either of the other processes.

THE *Chronique Industrielle* mentions what it calls the "new invention" of M. H. J. Piron, for preventing the rotting of fabrics of linen and cotton by tanning them. According to the account, M. Piron was struck by the circumstance that the linen bandages wrapped around the heads of Egyptian mummies, which show no signs of mildew or decay, are found to be impregnated with some vegetable resin; and following this indication, investigated the properties of a considerable number of tarry and resinous matters, and found the substance which is extracted from birch bark for tanning Russia leather to be the best suited for the preservation of vegetable fibres, although others may be used. Whether M. Piron has patented his process we are not told, but it was certainly quite unnecessary for him to go back to the ancient Egyptians for examples of a mode of treating linen and cotton which is in common use among the sea-faring population of all civilized countries. One can hardly cross the English Channel, or glance at the shipping in any Mediterranean port, without seeing, amid the white canvas of larger vessels, the picturesque reddish sails of fishing boats and lighters, whose owners, in pursuit of durability rather than appearance, have put them to soak, when opportunity offered, in their neighbor's tan-pits. Even in this country tanned sails, though exceptional, are by no means unknown, and more of them would probably be used if their merits were better understood.

THE *Building News* calls attention to the number of fires which occur from "defective flues," and urges the necessity for better construction of chimneys. It thinks that terra-cotta flue-linings form, on the whole, the best safeguard against fire that we have, and suggests that where these cannot be used the flues should be well pargeted inside to prevent the escape of sparks, and that in all cases chimneys should be built with eight-inch walls to a height of at least six feet above the highest fireplace opening into them. This is a subject which needs quite as much attention in this country as in England, and nothing would please us more than to see the managers of the insurance companies, who practically control all such matters, undertake an active crusade against a particular item of bad building which must cost them, in this country, something like a hundred thousand dollars a day. The art of building safe chimneys is a very simple one. Make them thick enough not to heat through, and steady enough to stand alone, and keep every sort of wood-work at least one clear inch away from them, and all danger from "defective flues" will be averted. The substitution of terra-cotta pipe-linings for an extra four inches of brickwork is permissible in some cases, but is not to be depended upon for protection, and the terra-cotta in the form usually employed adds nothing to the stability of the chimney, which is as important as the thickness of its walls. The pargeting of the flues, which the *Building News* thinks desirable, is a very doubtful expedient. After some years of use the coating of mortar on the inside of the chimney, unless made with a large proportion of cement, often cracks and scales off, bringing with it in its fall a considerable part of the mortar in the joints, which are thus left more exposed to the passage of sparks through them than if they had been simply struck flush in the first place. As a general rule, a cheap chimney may be taken as a dangerous one; the brick and mortar needed to enclose the fire beyond the possibility of escape, and to prevent the necessity for steadying the stack by bringing it in contact with the beams, cost a good deal of money, and until those who build to sell are compelled in some way to use the precautions which they probably know about, but do not see fit to employ, those who buy and live in new houses must not be surprised to have them occasionally burnt down over their heads by means of "defective flues."

THE COMPETITION FOR A MECHANIC'S HOUSE.

REPORT OF THE JURY.

TO a mechanic the most important point would be the plan, and in this the following would be the conspicuous points to consider:

1. One chimney for economy.
2. Convenient access to the same from several rooms.
3. As small a hall and as large rooms as possible.
4. Possibility of air currents through the rooms in summer.
5. Simple exterior, and square plan with few breaks.
6. As much attractiveness inside and outside as is consistent with the above.

"*Minimum*" (first prize) covers on the whole more of these points than the other designs. Plan is thoroughly studied. Parlor and one bedroom have no access to the chimney, but on the other hand each room is entered from the hall, and there is no waste space in either story. The *outside* might be more interesting, but the whole sheet is thoroughly well drawn. The author of the scheme should give his tenant a chance to warm his parlor.

"*Sweete Simplicite*" (second prize). Plan compact but not as closely studied in detail as "*Minimum's*," since there is more waste space in halls. The stairs require more expensive finish, while in "*Minimum's*" design these, though simple, would be attractive. One chimney reaches all but one room, which is a very good point. The stairs cut badly into the kitchen, although this fact is not emphasized in the drawing. The outside is attractive and simple, and the drawing is excellent.

"*Broome Street*" (third prize). This plan is larger than the two just named, and is less well arranged, as the first story extends beyond the second in the rear, the second beyond the first in front, and the partitions are somewhat scattered. The rooms are, however, well arranged around the chimney, and the house is attractive inside and outside, and has a better exterior grouping than either "*Minimum*" or "*Sweete Simplicite.*" The specifications are full, and the recommendations for future expenditure, as the owner grows more wealthy, seem as if they might be needed. The drawing is good, but lacks the dash of the two preceding sketches.

"*Cassius*" and "*Peregrine White.*" These two sketches are so much in the same spirit that the same remarks apply to both. They have a much better feeling in the design of the exterior than any of the other drawings, but it is fair to say that this is gained by a plan that gives small rooms and a long hall, and which makes two chimneys necessary. Although a long and low exterior is thus gained, the plans are not such as would be most useful to a mechanic. The front door in "*Cassius's*" design seems oddly placed, possibly by reason of the effect added to the outside by the porch roof at the end of the group. "*Peregrine White's*" drawing is simple and choice, and the finish of the eaves is knowing and good. Both drawings seem to have been mainly made with a view to an attractive exterior, and in this both are successful.

"*Country.*" Very good plan indeed; good enough for a better class of house. Good mantel. Fair exterior, but not especially attractive; not nearly up to the level of the plan.

"*Utile dulce.*" The plan in the first story seems complicated; alcoves four feet wide are not useful. While a lodge on a country estate might well have rooms in the roof, so that the building might be low and picturesque, a mechanic building his own house would wish as good and clear second-story rooms as possible. This plan also requires two chimneys. The cottage is, however, picturesque and the drawing remarkably good.

"*Caboul.*" Plan about as good as any offered. The hall and back doors well arranged; chimney not available for two of the rooms. The outside has some good ideas of detail, but the drawing hardly does it justice. With so good a start as "*Caboul*" is making, he ought to sketch more, so as to draw more freely and with more accuracy and dash. Such surrounding foliage and lettering prevent a good design from appearing at its real value.

"*Vulcan.*" Too late for competition. Plan rather crowded at the entrance, and staircase cuts into the lower room over the fireplace, although the view up the stairs from the hall might be pretty. Chimney not well placed for the chambers. The exterior very carefully drawn, but not with the touch of a person who is used to sketching. The grouping is pleasing. There ought to have been an allowance in the full specification for flashing a large cricket behind the chimney that blocks the valley.

"*XXX.*" Good plan. Fair exterior, but poorly drawn in perspective. The gable out of drawing, and the surroundings do not improve the sketch. The details indicate greater familiarity with practical than with artistic work.

"*Euchre.*" Stairway poorly arranged; central chimney good. Details nicely drawn and perspective prettily rendered.

"*Engineer.*" Plan too small. Although it may suit the sum to be expended, a family would be very uncomfortable in such small rooms. The outside too complicated. Drawings carefully made, but lacking in artistic touch or feeling.

"*Box.*" Plan compact, but not interesting, although the start is a good one. The arrangement of the outside is satisfactory, but all the drawing is hard and mechanical, and the author should practise drawing foliage in private until he can succeed better than in this drawing. Practice in drawing from nature or good copies will alone give him a good, firm and free touch.

"*B. D.*" Simple but commonplace plan; excellent exterior. A very neat sheet of drawings.

"*Cheek.*" Good plan, fair exterior, hard and mechanical drawings. Better give up using the drawing-pen so much in perspective, and cultivate free-hand drawing; cross-hatching with the drawing-pen is particularly expressionless.

"*St. Joseph.*" Too much hall, and chimneys ill arranged. Outside has too many breaks and porches for looks, or for a mechanic to invest in. Details ordinary.

"*Ventilation.*" Too late for competition. Plan quite good. This design is the only one offered for a brick house. It is uninteresting in itself, and the perspective does not make it more interesting; on the contrary, it looks thin, and the window reveals are not shown in it.

"*Clipper.*" Fair plan; no fire in front rooms; very neat drawings; attractive stair-newel, etc. The elevation chosen is high and awkward; the building looks better in the perspective.

"*Red-Head.*" Compact plan, but perspective rendered in a hard and mechanical manner, and not well designed. The details also look mechanical.

"*Commodité.*" Too late for competition. Stairs poorly placed. Plan unusual, without any corresponding gain. Detail and outside commonplace. Perspective muddy, and while the surroundings are elaborate, they are poorly drawn; a workmanlike set of drawings requires better lettering.

"*A Flat.*" Good plan. The rendering of the perspective gives promise of future delicacy and success. The slope of porch-roof takes the lines out of the picture, and injures the group, and the windows could be better studied.

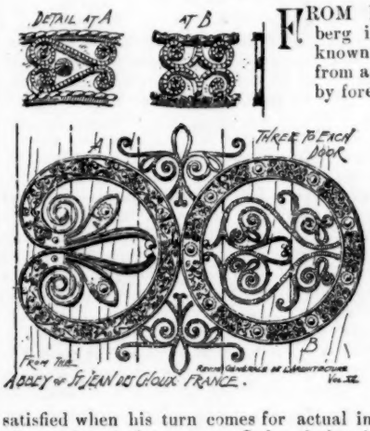
"*Tuscan.*" Plan awkward as to start of stairs. Outside of an ordinary type, and the drawing shows too little feeling for detail, and too much readiness to use ordinary mill-work. The lettering, etc., are not worthy of good drawings.

"*Welcome.*" Stairs out of the sitting-room not good, as draughts come down them. Better have stairs go out of hall; also better omit surroundings unless well drawn. The detail looks like ordinary mill-work instead of carefully designed detail. Better to have very little of the latter than much of the former.

H. W. HARTWELL, Chairman.
ROBERT S. PEABODY,
F. W. CHANDLER.

[THE design prepared by "*Thumb-Tack*" was received so late that it was not even submitted to the jury. It will, however, be published.— EDS. AMERICAN ARCHITECT.]

FROM BAYREUTH TO RATISBON.— NOTES OF A HASTY TRIP.— VIII.



FROM Rothenburg to Nuremberg is from the almost unknown to the thrice-familiar, from a town as yet untouched by foreign travel to one which the hastiest tourist in Germany cannot leave unvisited — one which has been so often described — and in these columns as well as others — that I should have small excuse did I stop to detail its attractions for the hundredth time. Every student of architecture knows what he will find there, and it is safe to say that he will be more than satisfied when his turn comes for actual inspection. Revisiting it after a lapse of ten years I found that in spite of the immense strides the city had made in the interval, its old beauty remained unaltered. New quarters had grown up, the streets were much fuller and more busy than before, the shops more numerous and far finer. Instead of lodging in a crumbling, odoriferous, musty inn overhanging the river, the traveller may now be accommodated in hotels as spacious and luxurious as any to be found in Europe, situated in wide and airy streets; but all these changes have made Nuremberg more, rather than less, interesting. They are, indeed, es-

pecially instructive and delightful as showing that new things may be combined with old in a way that injures the effect of neither. There was a great outcry some years ago over the commercial growth of the city and the supposed intention of the municipality to remove the old walls in order to give room for its expansion; but the most rabid of antiquarians must allow that a living commonwealth has other needs and other duties besides those of acting as the conservator of the relics of bygone days, and if every commonwealth attacked the problem of how to reconcile its different obligations with as much intelligence and skill as these Nurembergers have shown, the art-lover would have little cause for lamentation. In no place of which I know — certainly in no place where a sudden revival of commerce and industry has called for extensive changes—has there been shown so much loving and at the same time sensible appreciation of the value of ancient relics as in Nuremberg. Parts of the walls were taken down of absolute necessity, in order to give access to the growing suburbs; but not one stone more than was requisite was disturbed, and the damage would hardly be noted by a visitor. All through the town the old buildings have been carefully preserved, the new growing up beyond and around them; and the effect is more harmonious than could be imagined from a knowledge of how such amalgamation has resulted in most other places. While not adhering slavishly to old models the recent builder has succeeded in making his structures seem as though they were the natural modern successors of their older neighbors, and not upstart aliens which might have grown on any soil. Where restorations were necessary they have been made with such skill that no one who sees the famous *Schoene Brunnen*, for example, would imagine how great a part of it is due to the hands of recent workmen, copying with pious care the crumbling stones set by their far-off ancestors. To-day Nuremberg holds a place second to no German city, scarcely, in its commercial energy, and is especially noted as the home of many of the art-industries which have enriched Bavaria during the last dozen years; but it should be noted also as the city of all Europe where the most loving and intelligent care is taken of the rich treasures of the past. If Rothenburg is unique as an almost untouched picture of days long gone by, Nuremberg is equally unique, I must repeat, in showing how to-day and yesterday may dwell together in harmony and beauty.

One of the most striking facts about Nuremberg — one which must impress itself at least unconsciously upon the mind of every visitor — is the degree to which the town is pervaded by the memory and the influence of one man. Varied as is the history of the place, vivid as are its annals both in politics and in art, crowded though they are with striking and impressive names, there is one story, one name beside which all else takes the secondary rank in our interest and imagination. There are many places filled with the aroma of a single name—as Parma with Correggio's, as Orvieto with Signorelli's—but they present far less of interest in other directions than does Nuremberg; the single figure stands out against a background less vivid, less well-known, less crowded with mighty shapes. But Nuremberg with all its other memories, all its thousand attractions of every sort, all its names of high rank in many branches, is first of all to-day the shrine of Albert Dürer. It is as his home that it appeals most strongly to our hearts — it is his life, his steps, his traces that we seek first and with the most of eagerness. The whole city seems to belong to him, to be part and parcel of his work and fame. Kaisers and truculent burghers, architects, sculptors, other painters, are all forgotten for the moment when we first see Albert Dürer's home, and the longer we stay the more his memory seems to pervade the place. We follow up a hundred other threads of interest and throw ourselves into the history of many other periods; but we come back to him and his as to the main centre round which all else but clusters. We can imagine Nuremberg without Adam Krafft or Peter Vischer; without its Lorenzkirche, even without its citadel. But without Albert Dürer it would not be Nuremberg at all. He is one of the few artists of whose life and labor we know almost as much as of their artistic outcome; but this fact would not make him so vitally present to our minds were his not a personality of such singular charm. It is something more than admiration; it is affection we feel for the man and for the artist. No man was ever more identified with the life of his native place, no artist ever a more patriotic citizen; and it is his just reward that he is perpetuated to-day in Nuremberg as perhaps no other artist is in any other place, for it is only the *work* of a Correggio or Signorelli we seek in the places where they labored — but it is the memory of the man himself we seek and find in Nuremberg. Everything speaks of him — his pictures, the church where he worshipped, the streets where he walked, the *Kneipe* where he drank, the walls he built, the graveyard where he lies buried, the tombstone with its famous "*Emigravit*." Truly did Longfellow say of him — though the lines are almost too trite to quote: —

> "Fairer seems the ancient city and the sunshine seems more fair,
> That he once has trod its pavement, that he once has breathed its air."

He worked and planned for his city in life, and his city is his monument to-day. The walls of the town are perhaps the most beautiful in existence, but it was not this fact which raised such a lament when it was rumored they were to be destroyed — it was, to every lover of art, to every lover of Nuremberg, the fact that Albert Dürer had had a hand in their erection. Is it not a proof that art brings the truest immortality, this fact that Dürer's memory reigns in Nuremberg to-day not only above every other there, but more dominantly, I think, than the memory of any man of his time lives in any place?

There is one other personality which is very living and very fascinating to some of us in Nuremberg to-day, though for different reasons, — for those of an extrinsic rather than of an intrinsic sort. We do not care greatly for Hans Sachs as history, still less as literature, reveals him to us; but Wagner's *Meistersinger* has thrown a halo of interest about his figure which makes him very vivid to us in the streets of Nuremberg. I am sorry for him who goes to Nuremberg without knowing this drama. He might as well go without ever having heard the name of Dürer. Nay, better, for he would soon learn of Dürer when once upon his native soil, but would always miss the delight of those to whom Wagner's Sachs is such a living and lovable figure. And it is not only Sachs himself but all the temper, all the life, all the picturesqueness of his time and his city we are shown, with such truth and clearness that we can reconstruct their image for ourselves from the rich fragments which remain and from Wagner's poetry. And here we have another witness to the potency of art — for art has done for us what all the prose and all the history in the world could not — has absolutely revivified the past, clothed its dead bones with life, and made it as clear and as present to our minds as the present all about us. Not a few of us, I am sure, owe our first interest in the name of Nuremberg more to Longfellow's little poem than to all the histories and biographies we ever read; and those of us to whom Wagner has sung of Sachs's city, and to whom he has shown its former shape, care more for and learn more from the creatures half or wholly of his imagination, than for the dim and bloodless shapes we read of in the historian's chronicle. I heard some one say once that in the last generation people went to the Wartburg for the sake of Luther but that now they go for the sake of Tannhäuser. If so, and I do not doubt the truth of the epigram, the change is probably not owing so much to the less devout temper of our day as to the fact that in the interval Wagner's art has irradiated this place too.

A few years ago Dürer's former home was bought by the city and restored as nearly as possible to its condition in his time. It is a tall half-timbered structure with an immense overhanging roof standing on a street corner just under the shadow of the city wall — which, however, was not built when he was painting, so that the gloomy studio on the ground floor was then much better lighted. Upstairs we see the rooms in which he lived and worked, low-ceiled quaint little apartments with square windows filled with tiny panes of glass. A good collection of reproductions of his engravings and drawings is displayed in them, and altogether, whether or no we believe every tale as to this and that article having been used by him, his home is the most satisfactory of any similar abode I yet have seen. It is probably almost exactly as it was in his time — and it is certainly just exactly as we feel it should have been. Another place which no visitor should omit to see is the tiny little *Wirthschaft* where the artists of Nuremberg used to congregate at night. It stands almost free near the corner of one of the most picturesque squares of the town, and bears the name of the *Bratwürst glöcklein* — which, being literally translated means "little fried-sausage bell." Such was the title of an æsthetic café in Dü er's time when affectation could certainly not have been a badge of art! At the corner of the low little building projects an elaborate wrought-iron arm holding a bell — whether the original signboard or a later imitation it is of course not possible to discover. Within it is the tiniest of places, just room for a narrow long table and its rows of stools, everything in it being of the most picturesque antique appearance. Relics of former great men hang all about, and on a shelf above the door are great beer mugs labelled with famous names, which are sworn to as having been the actual private drinking vessels of a Dürer, a Krafft, a Vischer and a Baumgartner. Fortunately the room is not a mere show-place but is still in use — daily crowded with fat burghers taking their evening meal or their hourly beer; so it is all the easier to imagine its appearance in the glorious sixteenth century.

As I premised, I have no idea of telling once again the story of Nuremberg's architectural attractions. I will only say that no church in Europe is from a pictorial point of view more entirely delightful and satisfactory than the Lorenzkirche. If its interior has ever been renovated it does not show the traces of modern hands; and time has touched it with the most caressing finger, obliterating no slightest detail, removing nothing, altering nothing, only adding a richer color and a mellower tone. The light in the church, especially toward sunset, is marvellously beautiful. Such an atmosphere of golden mist falling on such an accumulation of softly colored, dusky treasures I remember in no other church. One does not want to criticise or to examine, but day after day, no matter what else of interest is on hand, one is tempted to end one's task by turning in again to the Lorenzkirche and sitting idly for an hour to drink in its beauty. Architecturally, the church is of course, most interesting — especially so as showing how good an effect was sometimes produced by the juxtaposition of two quite different styles of building. The main portion of the structure has a nave and aisles, but the choir — very large in proportion — was built in the fifteenth century after the *Hallenkirche* plan, the roof of equal height throughout and the divisions only marked by tall slender shafts rising to the intricacies of the vaulting. The vaulting itself is as curious and as beautiful as any I have seen. A narrow winding staircase in the wall brings one to a gallery with a fine open balustrade which runs around the

choir at a great height. From this a marvellous perspective of the nave is obtained and the entire beauty of the church first recognized. Here too we come close to the upper portion of Adam Krafft's famous pyx which curves its head under the ceiling like a slender fern. And it is well worth examining thus near at hand, even though we find that the stone has been covered with a coat of paint. This must have been done some time ago, however, for the color has toned down again so that one does not realize the fact save upon close inspection.

It is hard to say which is more interesting; the building itself or the countless odd and curious relics with which it is crowded — the great carved chairs labelled with the names of the guilds wherein, until just a few years back, the guildmasters sat on certain occasions to receive alms for the poor of their corporations; the quaint wood carvings of Veit Stoss and his pupils which rest against the wall or are suspended in mid-air from the ceiling; the coats-of-arms which in one place cover a large extent of wall, hung there in memory of families which have become extinct. Beautiful as are the other churches of the city, their attractions are less to every one, I think, than those of this wonderfully impressive and pictorial Lorenzkirche. Fortunately one can obtain what is rarely to be had of any church — a good large photograph of the interior, taken from a high point of view which, while it does not, of course, reveal the church to those who have never seen it, yet recalls its chief charm to those who have,— the glory of misty light which fills its rich interior.

M. G. VAN RENSSELAER.

PREVENTION OF FIRES.[1] — II. [APPENDIX.]

NOTES ON SOME OF THE VARIOUS AGENTS EMPLOYED TO RENDER MATERIALS UNINFLAMMABLE.

IN March, 1855, M. Salomon, of Paris, submitted to the Board of Ordnance a method of rendering wood and canvas incombustible by treatment with soluble glass or silicate of potash. The same materials, employed in a different manner, had been suggested by Mr. (now Sir Frederick) Abel to render huts in the Crimea fire-proof. M. Salomon's plan of mixing and applying the silicate was open to question, but the subject was of such importance that Mr. Abel recommended to the Board of Ordnance the undertaking of experiments without delay, in which he proffered his assistance.

In August, 1855, Mr. Abel reported farther on M. Salomon's process. Experiments were made with fire-proof liquids of the following composition:—

FIRST BATH.	Kilos.	SECOND BATH.	Kilos.
Acid sulphate of alumina	30	Dried chloride of calcium	20
Gelatine (glue)	10	Gelatine (glue)	10
Water	60	Water	70

Glue having been dissolved by warmth, the salts were added. On the liquids being mixed, a mutual decomposition of the sulphate of alumina and chloride took place, forming sulphate of lime and chloride of aluminum, a soluble deliquescent body possessing the property, like other saline compounds, of precipitating gelatine from its aqueous solution, and converting it into an insoluble substance like leather. It was M. Salomon's intention to fill up the pores of the material treated with an insoluble substance unalterable by heat, and to produce a hard binding material on the surface with the precipitated gelatine. Some difficulty was found in preparing the first bath, owing to the tendency of the gelatine to separate, but the second bath gave no difficulty. Some dry timber was selected, and a portion treated as suggested by M. Salomon, viz., by immersion first in the sulphate of alumina bath, and secondly, after drying, in the calcium bath, while another portion of the timber was treated in reverse order. Twenty-four hours was the time of immersion. Placed upon a charcoal fire beside unprepared wood, those treated by the Salomon process were slower to ignite, and, when withdrawn from the fire, did not smoulder so long. But when thoroughly ignited, the preparation was of no avail.

Canvas treated by the Salomon process was very difficult of ignition, but it was rendered rigid and harsh by the treatment.

In September, 1855, Mr. Abel reports on other methods for rendering wood, etc., fire-proof. He enumerates Maugham's process, which consists in saturating dried wood with phosphate of soda and muriate or sulphate of ammonia, in certain proportions; that of Lieutenant Jackson, by which wood is impregnated with a solution of salts of zinc and of ammonia. These processes, although they do, to a certain extent, diminish inflammability, are not cheap or effective. Silicate of soda, on the other hand, offers many advantages, among these being that wood is easily coated, and that the coating is not deliquescent. Wood was soaked in a weak solution and dried, and then placed on a fire with unprepared wood, when the protective character of the silicate was fully established. A hut, built in the Marshes at Woolwich, was coated with silicate inside and out in one part, and another part with a mixture of lime and alum, when the protective character of the former was again demonstrated. After the hut had been burned, an examination of the charred planks proved that where the silicate had been applied, the fire had not completely penetrated.

Also, in September, 1855, Mr. Abel states that by combining lime with silicate of soda, he produced a fire-protective for application to wood, which resists the action of water as well. The fire-proof nature of the mixture is superior to silicate alone.

In March, 1856, detailing the results of practical trials with silicate and lime, Mr. Abel establishes the effective character of the mixture. A circular of printed instructions was afterward issued, and a paper was prepared on the subject, and printed in the "*Aide Memoire*" of the Royal Engineers, for 1856. The process was afterwards applied, to some extent, to camp-huts at Aldershot, and silicate of soda alone was tried on the wood-work in the interior of the huts.

In August, 1857, Mr. Abel explains that the fifteen tons of material, forwarded to China, is not for experiment, but for use in coating wooden structures on that station; recommending also its employment in India, and explaining how it could be applied to thatched buildings. (The recommendation to send the silicate and lime mixture to China is explained to Sir B. Hawes, March 18, 1857).

In July, 1859, Mr. Abel reports upon sail-cloth, supposed to be rendered uninflammable by a process applied by Messrs. Versmann and Oppenheim (see printed memorandum).

In July, 1859, Mr. Abel states that canvas and other fabrics may be rendered fire-proof, or rather protected from fire, if the alkaline silicates are employed in a peculiar way, with other agents, and suggesting that application be made of this discovery.

In January, 1860, Mr. Abel submitted to the Ordnance Select Committee samples of fabrics rendered fire-proof. Several saline bodies had been suggested for the purpose, but these were none of them trustworthy: in the canvas submitted, a material of a protective character had been fixed within the fibre of the fabric, a double lead and sodium silicate.

In March, 1861, Mr. Abel gave directions for trial of protected canvas made into tents, but reminded the committee that, obviously, nothing will prevent the fabric from charring, if great heat is at hand. The trial recommended was to ignite shavings in contact with the canvas.

In July, 1861, Mr. Abel reported that experiments had been made by him with clothing of men at the Royal Gunpowder Works, Waltham Abbey, and recommended in lieu of ordinary clothing treated with protective material — which glows, on burning — the wearing of woolen fabric. The material called "lasting" was recommended, and was adopted throughout the powder works at Waltham Abbey in 1861, and afterwards in other powder works. Its use was made compulsory in all manufactories of explosives by the Explosive Act, 1875.

In December, 1870, Mr. Abel recommended, as protective coating for the interior of buildings in which manufacture of powder is going on, a material combining the qualities of the silicate of soda and lime coating, as already proposed by him for camp-huts, with certain other qualities, such as its non-liability to retain dust-particles, and non-injury from washing. Mr. Abel suggests—(*a*) equal parts of whiting and zinc (by weight), mixed and ground together; (*b*) equal parts (by measure) of water and syrupy silicate of soda; (*c*) the mixed liquid to be stirred up with the whiting and zinc, and then applied like ordinary paint.

In July, 1871, Mr. Abel recommended the foregoing and also Torbay paint mixed with silicate. Also recommended, as before, the silicate and lime, for out-door work.

In February, 1872, Mr. Abel again called attention to the qualities of these protective coatings for indoor and out-door coatings.

In May, 1872, Mr. Abel recommended chloride of calcium for rope mantelets, so as to keep them damp, and prevent ignition by the firing of the guns. This recommendation was adopted, with very successful results.

In March, 1881, Mr. Abel stated that tungstate of soda (first proposed by Versmann and Oppenheim as a protective for fabrics, see printed report to British Association, 1854) may be applied to wood and fabrics as a protection from fire; but believes it has no advantage for the first-named purpose over the soluble silicate material proposed twenty-five years previously.

In July, 1881, Mr. Abel reported on a fire-extinguishing liquid, submitted as consisting of a strong solution of common salt and soluble glass and stated that it presents little novelty.

Chemist, W. D. To Under Secretary of State for War, July 20, 1859.

The specimen of prepared sail-cloth, submitted by Messrs. Versmann and Oppenheim, has been most effectively deprived of inflammability by the treatment to which it has been subjected. When exposed to the action of a powerful heat or flame, inflammable vapor is evolved, which ceases to burn directly the canvas is removed from the source of heat, and the charred portions of the material cease even to burn in a short space of time.

The protecting agent is so firmly fixed in the canvas that it is not removed at all by friction or repeated washing. The protection afforded to the fabric may, therefore, be considered very permanent.

The only objections of importance which can be raised against the very efficient method of Messrs. Versmann and Oppenheim, of protecting canvas from fire, are:—

1. The great increase in weight which the fabric suffers, and which amounts to nearly fifty per cent of the original weight of the canvas.
2. The comparative costliness of the protective agents employed.

The first of these objections is, to a great extent, inseparable from the efficient permanent protection of canvas and other fabrics from fire; as, in order to attain that result, it is necessary to impregnate the fabric completely with some material which will remain in it as an insoluble solid. I have reason to believe, however, that canvas may be thoroughly and permanently protected from fire, without suffering so great an increase in weight as that resulting from Messrs. Versmann and Oppenheim's method of treatment.

The agents employed by these gentlemen for the preparation of the canvas are compounds of tin, one of the most expensive metals of commerce. The cost of an important process like that referred to can only be looked upon as a serious objection to its employment, when its object may be attained as effectively and permanently by a much cheaper method.

The process of protecting canvas from fire, to which I have called attention in a letter of this day's date, possesses the very important advantage of comparative cheapness over the process of Messrs. Versmann and Oppenheim.

I therefore beg to suggest that the protection of canvas from fire by the agency of silicates, as proposed by me, be made the subject of experiment in the first instance, and that the comparatively expensive process of Messrs. Versmann and Oppenheim be practically tested, should the silicates not fulfil my statement of their efficiency as protectives of permanent character. . . . . (Signed) F. A. ABEL.

The Comparative Value of certain Salts for Rendering Fibrous Substances Non-inflammable.

At the meeting of the British Association at Aberdeen, in 1859, a communication on the above subject was read by Mr. Versmann and Dr. Oppenheim. The paper commenced with a consideration of the difference between animal and vegetable fibre; the first containing about eighteen per cent of nitrogen, and the latter consisting exclusively of carbon, hydrogen and oxygen. Animal fibre chars, but is not inflammable, whereas vegetable fibre is. The first idea would be to introduce nitrogen into vegetable fibre by way of a protection, in some such form as glue or albumen. This could not practically be done, though the addition, by means of urea, of thirteen parts of nitrogen to one hundred parts of muslin, did render it non-inflammable. As early as 1735, a patent had been granted to Obadiah Wild, who applied a mixture of alum, borax, and vitriol to paper pulp. It is believed that paper made of this pulp was used for making cartridges. In the early part of the century the attention of many chemists was directed to the subject. Gay-Lussac, in 1830, proposed the carbonates of potash and soda.

[1] From the Journal of the *Society of Arts*.

Fuchs suggested water-glass. The writers of the paper then proceeded to give an account of their own experiments. They commenced trying as many as forty different salts, and those salts which seemed preferable on account of the small amount required, were afterwards tested on a large scale in muslin manufactories or in laundries. Accounts are given of the behavior of the following re-agents: Chloride of potassium and sodium, carbonates of potash and soda, hydrate of soda, bicarbonate of soda, borax, phosphate of soda, sulphate of soda, bisulphate of soda, sulphite of soda, silicate of soda (water-glass), stannate of soda, tungstate of soda, cyanide of potassium, carbonate of ammonia, oxalate of ammonia, biborate of ammonia, phosphate of ammonia, the double salt of the phosphate of ammonia and soda, sulphite of ammonia, chloride of ammonium, iodide and bromide of ammonium, mixture of phosphate of ammonia and chloride of ammonium, chloride of barium, chloride of calcium, biphosphate of lime, sulphate of magnesia, tersulphate of alumina, potash-alum, ammonia-alum, sulphates of iron, copper, and zinc, chlorides of zinc, chlorides of zinc and tin, double salts of proto-chloride of tin, and chloride of ammonium, pink salt (?). The writers state that all inorganic salts applied in solution to fabrics diminish inflammability by absorbing heat and excluding access of air. Of all the salts experimented upon, only four appeared to be applicable for light fabrics. These were: —

1. Phosphate of ammonia.
2. The mixture of phosphate of ammonia and chloride of ammonium.
3. Sulphate of ammonia.
4. Tungstate of soda.

The sulphate of ammonia was found to answer well for treating muslin in the process of finishing, but the muslin would not stand the heat of ironing. Only the tungstate of soda could be recommended for laundry purposes. In practice, in order to avoid the formation in solution of an insoluble bitungstate, it was found desirable to add a small proportion of phosphoric acid or phosphate of soda. The salts tested being all soluble washed out when the fabric was wetted. Experiments were therefore carried on with the object of fixing the protective material of the fabric. For this purpose, attempts were made to fix sulphite of baryta, phosphate in alumina, and some silicates, by precipitating them by double decomposition in the fibre; these attempts were all unsuccessful. The oxide of zinc and alumina was found to protect the fibre, but it did not adhere when washed. The oxychloride of antimony proved a good anti-inflammable, and withstood the action of water, but not that of soap and soda. The borate and phosphate of protoxide of tin acted effectually when precipitated in the fibre by ammonia from acid solutions. They withstood washing, but tinged the fabrics yellow. So also did arseniate of tin. Stannates of lime and zinc protected the fabric, but would not withstand soap and soda. Oxides of tin could be permanently fixed, but gave a yellow tinge, and so were only suitable for coarse substances, such as canvas, sail-cloth, etc. It was found, however, that sail-cloth treated with this salt lost in strength, and increased greatly in weight. The conclusion arrived at was that there was little hope that anti-inflammable agents could ever be fixed in fabrics without injury thereto. The final conclusion arrived at advocated the adoption of sulphate of ammonia, and of tungstate of soda in manufactories of light fabrics, and in laundries.

Application of the Soluble Alkaline Silicates.

In 1859, Professor Abel reported to the War-Office on the above subject. A portion of his report dealt with the application of silicates to the protection of wood and fabrics from fire. When a piece of wood, thinly coated with the silicate, is exposed to high temperature, or to contact with flame, the wood emits inflammable vapor which catches fire, but the glazing prevents the solid portion of the wood burning. As soon as the coated wood is removed from the heat, the gases will no longer be evolved, and the flame ceases. In 1854, Mr. Abel instituted experiments with soluble glass, with a view of discovering a method of protecting wooden camp-huts from fire. It was found that a thin coating of silicate afforded considerable protection, but this was diminished by the effect of air and weather on the boards. Successful results were, however, obtained by applying lime-wash over a coating of silicate, and a second coating of silicate over the lime. The hard coating thus obtained resisted rain, and did not exhibit any tendency to crack, shrink, or detach itself from the wood. In 1856, satisfactory experiments were carried out upon a hut thus prepared. The cost of covering wood with the protective material was about 2*d.* for a surface of ten square feet; at the date of the report (1859), it was reduced to half that sum. The following were the difficulties to be met in treating canvas or other similar fabrics: —

1. The protective materials render the fabric very rigid and harsh.

2. The substances employed have a tendency to absorb moisture; and, therefore, to keep the fabric in a very damp condition, an effect which, although promoting the efficacy of the agent, is very inconvenient in many instances.

3. The application is, or soon becomes, detrimental to the strength and durability of the fabric.

4. The materials are of such a nature as to be readily detached from the surface, or to be rubbed or shaken out of the cloth.

5. They are soluble in water, and, therefore, their application must be renewed whenever the fabric has been exposed to wet.

In the case of finer fabrics which require washing, No. 5 would not be of very great importance, inasmuch as the treatment by one of the numerous saline compounds proposed could be repeated. The problem of protecting canvas, such as is used for sails and tents, had been for the first time satisfactorily solved by Messrs. Versmann and Oppenheim, who introduced into the canvas a compound of tin so permanently fixed that washing did not remove it. The strength of the fabric was not affected [but see statement at the end of Versmann and Oppenheim's paper]. The canvas, when exposed to heat, or flame, behaved just like a piece of wood prepared with soluble glass. The only important objections were the great increase in weight, and the costliness of the agent employed. In consequence of this costliness, Professor Abel had undertaken some experiments with soluble glass. Simple saturation with an alkaline silicate afforded efficient but temporary protection. Great difficulties were found in attempts to fix the silicate in the canvas by combination with metallic oxides, but at last a successful method was discovered, of inducing the formation of an insoluble silicate within the fibre, the canvas being thoroughly saturated with the soluble glass, and a second agent [the name of which is not given] before the separation of the new silicate in the insoluble form occurred. The protection afforded was stated by Professor Abel to be thoroughly and permanently effective, while the cost of the material would be very considerably below that of the tin compounds used as the before-mentioned method. An appendix to the report gives an account of the experiments, at Chatham, on huts coated with silicate of soda and lime-washed; also directions for covering timber with protecting solutions of silicate and lime.

THE ILLUSTRATIONS.

HOUSE FOR R. C. JOHNSON, ESQ., WASHINGTON, D. C. MR. CHARLES H. READ, JR., ARCHITECT, WASHINGTON, D. C.

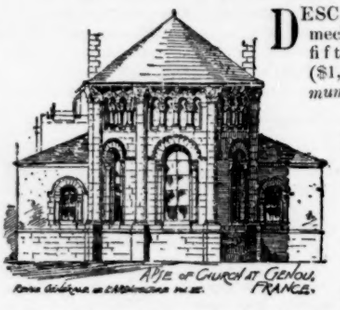
As the site was small and prevented the extension of the house toward the rear, the architect was obliged to dispense with the back stairs and introduced in their place a passenger and trunk lift running from the basement to top of the house.

THE FITCH INSTITUTE BUILDING, BUFFALO, N. Y. MR. JAMES G. CUTLER, ARCHITECT, ROCHESTER, N. Y.

PRIZE COMPETITIVE DESIGNS FOR A MECHANIC'S HOUSE SUBMITTED BY "*Minimum*" (MR. J. S. TROWBRIDGE, GLENDALE, O.) AND "*Sweete Simplicite*" (MR. A. C. SCHWEINFURTH, BOSTON, MASS.).

For description and comment see elsewhere in this issue.

DESIGNS FOR A MECHANIC'S HOUSE. — I.



Description of design for a mechanic's house to cost about fifteen hundred dollars ($1,500), submitted by "*Minimum.*"

This design contemplates a small, compact, and complete house, suitable in all respects to the purpose for which it is intended. The plan, in arrangement, is at once compact, having little or no waste room, and is also as convenient as practicable.

It is the intention to make the Dining-Room the Living-Room, and hence the chimney-stack has been placed so as to give a flue from the Kitchen and a good-sized fireplace for the Dining-Room. The stairway has been made a "box staircase" in order to lessen the expense, thus saving the cost of a finished stairway with newel-post, balusters, string, etc.

A slight saving in expense has been made by the manner of framing. The studs in the main portion are in 12-foot lengths from sill to wall-plate, the joist resting on a girt 1″ x 5″, sunk into the studs one inch, after the manner of balloon-framing, there being a raised girt at the ends of gables.

A slight saving has also been made in the construction of box-frames, requiring no casing on outside; the hanging-stile is made to project to receive shingles, clapboards, etc.

The cornice and gutter have been formed simply and economically.

A bath-room was considered a luxury and has been omitted entirely, and the only plumbing connected with the house is the cold-water supply to Kitchen sink and drains from conductors.

All the doors and windows are of factory make.

The house is plastered throughout the first and second stories, and is finished complete so as to make the house warm and comfortable in winter.

The finish is all of white-pine prepared for painting.

There will be a cellar under the whole house, well lighted and ventilated.

The shingles on second story and roof are to be merely dipped in oil with Venetian red, to give them tone, and are not to be painted. The first story and all trimmings, finish, etc., to be painted in colors to harmonize with the body of house.

The architect's fee has not been included in the cost of the house, and will be $50 for drawings and specifications, and including two visits during the construction, the first one being at the beginning to see the work started in the proper manner, and a final visit when the building is to be accepted. "*Minimum.*"

BOSTON, April 19, 1883.

"*Minimum:*"

Dear Sir, — I propose to furnish material and perform the labor for building cottage as per plans and specifications for the sum of fifteen hundred ($1,500) dollars. Yours truly, D. PERKINS.

DESIGN SUBMITTED BY "*Sweete Simplicite.*"

ATTENTION would be called to the following facts: —

The prices and quantities have been prepared by a Boston builder of the first class, and would cover nearly any point in the suburbs of that city.

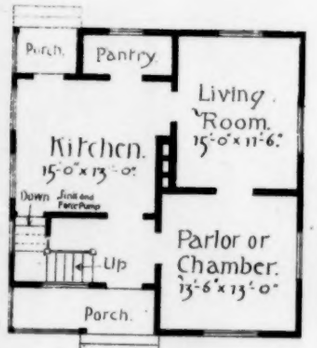
18″ rubble wall for cellar, laid dry; 8″ brick underpinning, for two feet above grade; cellar 7′ in clear; sill, 6″ x 6″; joists, 2″ x 9″ and 2″ x 8″, respectively; rafters, 2″ x 7″; studs, 2″ x 4″, 16″ on centres; gutters, 4″ x 5″, Stearns's cypress; no back-plaster, but double sheathing-paper; shingles laid 5″ to weather. Factory doors and windows. Roof-shingles stained with petroleum. Outside and inside finish, and wall-shingles, one coat oil and two coats lead paint. Inside

COPYRIGHTED 1883 JAMES R. OSGOOD & CO.

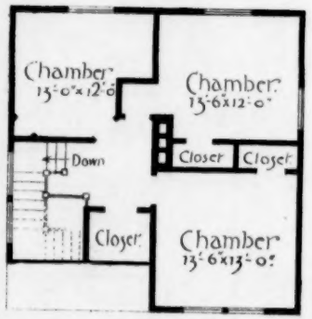
$1500 00
ARTISANS' COTTAGE.
AM. ARCH'T. COMPETITION.

"Sweet Simplicific."

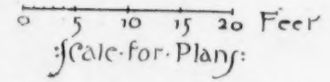
(A. C. Schweinfurth)



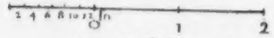
First Floor Plan.



Second Floor Plan.



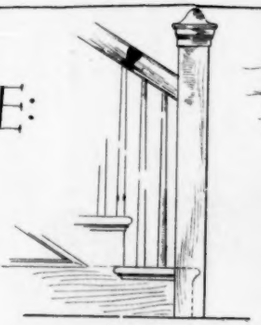
Scale for Plans.



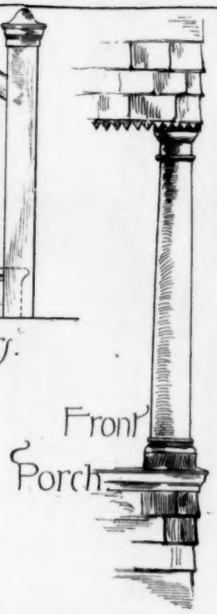
Scale for Details.

Elevation.

Perspective Sketch.



Stairs.

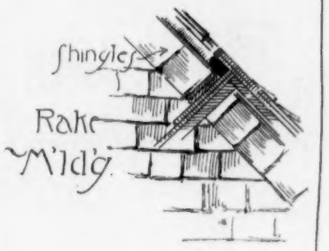


Front Porch

Eaves.

Window Jamb

Water Table



Heliotype Printing Co. 211 Tremont St. Boston.

No 591 American Architect and Building News, June 23, 1883.

COPYRIGHTED 1883 JAMES R. OSGOOD & CO

The Fitch Institute Building, Buffalo, N.Y.

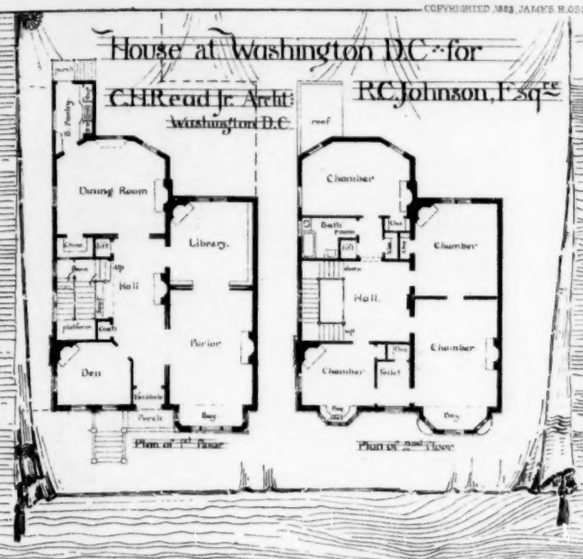
James G. Cutler, Architect, Rochester, N.Y.

Heliotype Printing Co. 211 Tremont St. Boston.

COPYRIGHTED 1883, JAMES R. OSGOOD & CO.

House at Washington D.C. for R.C. Johnson, Esq^re

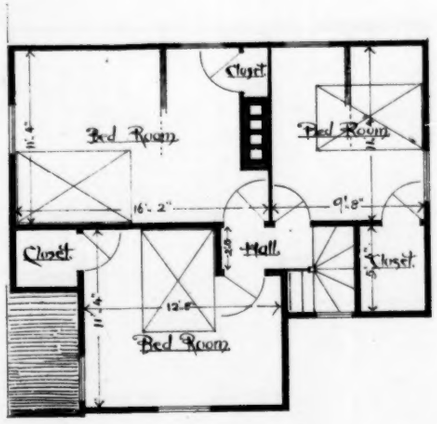
C.H. Read Jr. Archit. Washington D.C.



W.J. Marsh, Del.

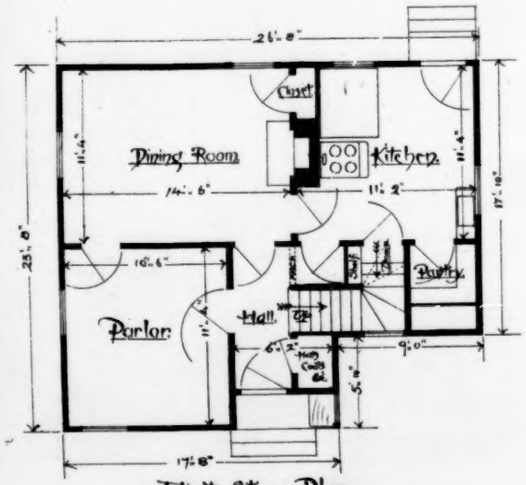
Heliotype Printing Co. 211 Tremont St. Boston

COPYRIGHTED 1883, JAMES R. OSGOOD & CO.



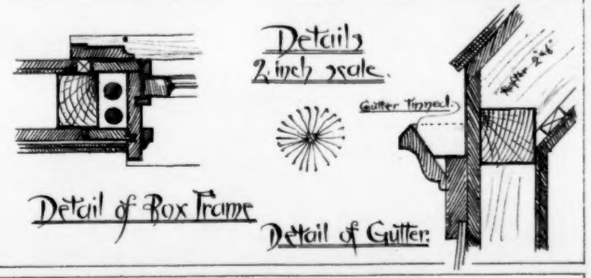
Second Story Plan.

Scale of Plans 1/8 inch.



First Story Plan.

Perspective View.



A Mechanic's House
to cost about $1500.00
Am. Architect Competition — submitted by "Minimum."
(J. S. Frowbridge)

Side Elevation.

Heliotype Printing Co. 211 Tremont St. Boston.

finish, pine, with cherry stair-rail and cap to posts. Simplicity and compactness of plan.

NO. 32 LANCASTER STREET, BOSTON, MASS., April 21, 1883.

Dear Sir, — I will agree to build the cottage according to the plans marked "*Sweete Simplicite*, all complete, for $1,494.45.

Yours truly, ISAAC MCLEAN.

I find the quantities of material for your proposed cottage are as follows: —

20	sq. yds. excavation, @ $1.50 per sq. yd.		$ 30.00
39½	perch stone, " 2.50 " perch		77.75
700	sq. yds. plaster, " 25 " sq. yd.		175.00
4600	bricks, laid,		46.00
7000	ft. framing, @ $14.00 per M		98.00
4000	" rough boards, " 12.00 " "		48.00
1600	" flooring, " 22.00 " "		35.20
500	" outside-finish		17.50
26000	" shingles, @ $3.00 per M		78.00
5	kegs nails, " 4.00 " keg		20.00
15	doors, frames, and finish,	@ $6.00 per door	90.00
16	windows, frames, and finish,	" 5.00 " window	80.00
400	ft. base and moulding,	" 08 " ft.	32.00
200	" sheathing,	" 03½ " "	7.00
	Sheathing-paper		5.00
	Sink and pump		20.00
	Bell		3.00
	Stairs		50.00
	Bead grounds		10.00
	Teaming		12.00
	Painting		110.00
	Labor and incidentals		450.00
	Total		$1494.45

STRAWBERRY HILL.

A CENTURY and a quarter since Strawberry Hill became famous, it is doomed to distribution, if not to demolition. At any rate it is to be sold — house, pleasaunce, land, tenements, messuages, and hereditaments, stock, lock and barrel. With the exception of a few precious heirlooms, the pictures and furniture will be scattered to the four winds. There is to be an end, so far as human name and fame are destructible, of "Chopped-Straw Hill," built by Lord Bradford's coachman, out of his pickings and stealings, made into a pseudo-Gothic castle by Horace Walpole, and adorned by the last owner, a lady of exceptional talent, tact and beauty, with a gallery of contemporary celebrities, very unlike the fearful works of art which defaced the residence of Lord Beaconsfield. The portraits of her friends, painted at the instance of Frances, Countess Waldegrave, are at least pictures, and the majority are by that well-known Royal Academician, Mr. Sant. These, however, go with the rest, and the Strawberry Hill gallery will soon be a mere recollection of the guests who assembled there, as their fathers did at Holland House. The names of the successive owners and tenants of Strawberry Hill have an odd ring when placed in collocation. To the fraudulent coachman who gave his master's horses chopped straw instead of oats, succeeded, at one time and another, Colley Cibber, at the time the improver of Shakespeare wrote "The Refusal;" Talbot, Bishop of Durham; the Marquis of Carnarvon, Lord John Sackville, and Mrs. Chenevix, the celebrated toy-woman, from whom it was bought by Horace Walpole, who was delighted to see that

> "A small Euphrates through the piece is roll'd
> And little finches wave their wings in gold,"

and thanked God that the Thames was between him and the Duchess of Queensberry. In his time Twickenham was a Baiæ, as he classically termed it, with "dowagers as plenty as flounders." Twickenham, no longer pronounced "Twit'nam," except by very ancient dowagers, is now a suburb of London, with still a little land to be let on building lease, but with only an occasional flounder in the water to startle the angler, whose fine tackle is rather calculated for roach and dace than flat-fish. Walpole tells us of Lord John Sackville having "instituted certain games called criketalia," celebrated in honor of him in a neighboring meadow — a fact which may prove interesting to modern wielders of the willow, and it is odd, on the lawn at Strawberry Hill, to reflect that Walpole was stopped by highwaymen on his way thither from town, and that he and the resident dowagers of the neighborhood kept a sharp lookout for burglars, but not sharper than is necessary in this present day, so much more permanent has housebreaking proved than the sister profession of "high-toby." Duval and Turpin have passed into the region of myths, but Jack Sheppard is still to the fore. The robbed seem to have once been as knowing as the robbers, for when Walpole was stopped in company with Lady Browne she expressed great anxiety, after the highwayman had left them, lest he should return, as she had given him a purse with only bad money, which she carried on purpose, as the smugglers of Romney Marsh manufactured base guineas in order to be even with their French confederates, who gave them short measure of the "right Nantz." The physical features of Walpole's retreat have also changed since his day. The river runs with sharper scour in a narrower bed, and the trees planted by Walpole, as well as those of Pope's villa, have had time to grow and remove from the latter the reproach of bareness urged by Walpole with the fanciful indelicacy characteristic of the man and the time.

To English people, and foreigners of mark who lived in the forefront of politics or art, society or letters during part of the last three decades, few houses were or are better known than Strawberry Hill. By her virtues, her social tact and position, her keen intelligence and good nature, Frances, Countess Waldegrave became the centre of a circle unequalled for intellect, rank and reputation, a legitimate but far more agreeable successor of the brilliant society of Holland House. There was no necessity to spread nets to catch lions for Strawberry Hill, for those noble animals naturally gravitated thither. When it is remembered that Lady Waldegrave was married four times, and remained on affectionate terms with the relations of all her husbands till the day of her lamented death, it is easy to understand that the influence exercised by her was of no ordinary kind. So delicate was her sense of appreciation, and, it may be added, reverence, that when she made important additions to Strawberry Hill she faithfully preserved the character of Walpole's sham "Gothic," as he called it, and refrained from sweeping away the little low-browed rooms of Chopped-Straw Hall, which, by the way, was not known by its present name until Walpole discovered it in an old deed. Had she been able to prevent the sale, in 1842, of Walpole's relics, pictures and china, there is little doubt that she would have done so. Pecuniary embarrassment — real, or perhaps, as has been hinted, imaginary — brought about the distribution of nearly all Walpole's treasures, except some family pictures and a very little china and furniture. All the rest was knocked down by that prince of rhetorical auctioneers, George Robins, the same who apologized for the nuisance caused to a country house by cuckoos and nightingales. All the rest of the "rubbish," as it was profanely called by a contemporary Philistine, was scattered to the four winds, including Queen Elizabeth's glove, the tortoise-shell jewelled comb of Mary, Queen of Scots, the spur with which William of Orange pricked his charger through the Boyne, the clock which was Henry VIII's wedding present to Anne Boleyn, the watch of Fairfax, the hat of Wolsey, and the bowl or tub of blue and white china, the cause of the accident immortalized by Gray in the ode "On the death of a favorite cat, drowned in a tub of gold-fishes." The bowl and pedestal were knocked down to the Earl of Derby for forty guineas. The sale took place in the pre-artistic period, and the prices realized were hardly more than a third of present market values. It lasted twenty-four days.

The modern history of Strawberry Hill is that of its occupation by Frances, Countess Waldegrave. When Walpole died he bequeathed it for life to the Hon. Mrs. Damer, who resigned it in 1811 to the Dowager Countess Waldegrave, who held the reversion. The house was subsequently allowed to get out of repair, and was then sold up, as already described. Several years elapsed before Lady Waldegrave was enabled to rescue it from its ruinous condition, to restore it, and add a new wing. The celebrated Waldegrave Gallery of Beauties, or, more correctly, of Lady Waldegrave's friends, male and female, is not, however, in the new part of the house. It is Walpole's old gallery restored, extending from the Round Tower to the original building, and is fifty-six feet long, seventeen feet high, and thirteen feet wide, lighted by stained-glass windows which originally contained all the quarterings of the Walpole family. This handsome room remains as it was at the time of Lady Waldegrave's death, and contains many remarkable portraits of distinguished men and women, the majority painted by Mr. Sant, R. A. As a gallery of contemporary celebrities it is still unrivalled, although here and there it is necessary to prefix the gloomy "late" to the name of a person known all over the civilized world. At the upper end of the gallery is Mr. Sant's fine picture of the Prince and Princess of Wales, the Prince wearing the ribbon of the Garter, and the Princess that of St. Catharine of Russia. Near the picture of the Prince and Princess are the portraits of Lord Palmerston and Lord Halifax, the latter wearing the broad ribbon of the Bath; Mr. Gladstone, and the late Earl Russell — an admirable likeness. On the main wall are portraits of the late M. Van de Weyer, of the late Catharine, Countess of Clarendon, and of the Duchess of Sutherland. One of Mr. Sant's happiest efforts in his favorite arrangement in white is the lovely face of the Baroness Alphonse de Rothschild in the bloom of youth and beauty. Again, one must write the gloomy "late" to the name of the Marchioness of

Northampton, and with more recent sorrow to that of Mrs. Stoner, painted in a light-blue ball dress. Between the Duke and Duchess d'Aumale, painted many years ago, appears Lady Waldegrave herself, by a French artist, a by no means successful portrait. Lady Spencer, with the beautiful Seymour upper lip, appears in black, Lady Alington in white, and Lady Selina Hervey in a superbly becoming costume of black and red — all favorable examples of Mr. Sant's skill, the latter magnificently painted. The late Duchess of Westminster, while yet Lady Constance Grosvenor, and the late Duchess of Sutherland, her mother, are also by the same pencil. Lady Churchill, painted by Sir Francis Grant, and the late Frances, Countess of Morley came next, and then the late Lord Clarendon and Mr. Harcourt, Sir Thomas Erskine May, the Duchess of Manchester, by Miss Tekusch, and by another lady artist, Miss Mortlock, an admirable likeness of the celebrated *raconteur* and Quarterly Reviewer, Mr. Abraham Hayward, one of the most frequent guests at Strawberry Hill.

In the round drawing-room is a portrait of the Marquise de Prie, mistress of the Regent Orleans, presented to Walpole by Mme. du Deffand, who had been her most intimate friend, and in the ante-room is a delightful sketch of Lady Bennet, by Cosway. In the new drawing-room are pictures of world-wide fame, such as Maria, Countess Waldegrave, by Reynolds; Walpole's "My Cousin Walgrave," the beautiful woman who was second illegitimate daughter of Sir Edward Walpole, married the second Earl Waldegrave, became mother of "the Three Graces," and after the Earl's death married William Henry, Duke of Gloucester, by whom she was mother of the late Duke of Gloucester (Silly Billy) and the Princess Sophia of Gloucester. "The Three Graces" themselves, Elizabeth, Charlotte, and Horatia, who became respectively Lady Waldegrave, Lady Euston, and Lady Hugh Seymour, appear in the masterpiece of Sir Joshua, at the end of the room, a picture for which he received eight hundred guineas, or only about thirty-five per cent more than has since been paid for a proof engraving of it. Two of the "Graces" are employed in winding silk, and the third at tambour work or embroidery of some kind, and all three are seated round an oval-topped table, the original of which is still at Strawberry Hill. It will be recollected that a few years ago Mr. John Everett Millais, R. A., painted his celebrated picture of the three Miss Armstrongs, avowedly from the suggestion of Sir Joshua's "Three Graces." The new drawing-room also contains the "Countess of Essex," by Reynolds; Ramsay's "Countess of Dysart," and "Mrs. Keppel;" the marble statue of "The Reading Girl," from the International Exhibition of 1862; a marvellously inlaid pianoforte; and a grand portrait of Sir Robert Walpole, whose ale-tankards were religiously preserved by his son Horace. In the billiard-room is the portrait of the late Lady Waldegrave, in a red velvet gown, painted by Dubufe in 1861; a delicious little picture of a young girl in red, attributed to Romney; Lowes Dickenson's well-known picture of the Liberal Ministry of 1869–74; and a Duchess of Marlborough, by Kneller. In the new dining-room are also several pictures of historic interest, such as portraits of Catherine Shorter, the first, and reputed faithless, wife of Sir Robert Walpole (mother of Horace), and the notorious Dorothy, Lady Townshend, whose letters and conversation were indecent and blasphemous enough to justify all that the satirists of the day could urge against the language of ladies of quality.

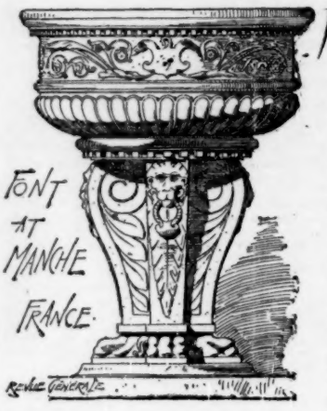
In the little low rooms of the old Chopped-Straw Hall, bought from Mrs. Chenevix, are several curious portraits and engravings. Mrs. Kitty Clive's red face is among the quality up-stairs, the face concerning which Lady Townshend said, after a few oaths, that Strawberry Hill would be "a very pleasant place if Mrs. Clive's face did not rise upon it and make it so hot." Her ladyship, who was the original of the Lady of Quality in "Peregrine Pickle," and Lady Bellaston in "Tom Jones," was in the right as to the rubicund look of Mrs. Clive, but unjust to that excellent comedian, whom Walpole described when in the receipt of a present of venison, as being "up to the elbows in currant jelly and gratitude." Mrs. Clive dwelt at Little Strawberry Hill, not far from the castle, in a house embowered in trees, tenanted after her by the Miss Berrys, and included in the coming sale. Walpole, regardless of plagiarism, called it Clivden, in defiance of "Cliveden's proud alcove," Anne Brudenell's bower higher up the river. If he erred in admiring Mrs. Clive, he nevertheless erred in good company, for Dr. Johnson declared his liking for her. "She always understands what you say," quoth the doctor, of whom the appreciative Catherine said, "I love to sit by Dr. Johnson; he always entertains me."

Among the odds and ends of Strawberry Hill is an engraving of Mr. and Mrs. Garrick enjoying the air at their riverain villa near Hampton. Walpole had, as he puts it, "contracted a sort of intimacy" with Garrick, and wrote to Bentley that the actor had affected to study his taste. Another curious relic is the receipt, preserved in Lord Carlingford's study, given by Alexander Pope for two guineas duly paid to him for his "Iliad," by Bernard Whalley, Esq. There is enough and to spare to be seen "positively for the last time" together at Strawberry Hill. — *London Daily News.*

The Building Trade of England. — The London *Economist* shows that the depression in the building trade of England is easily explicable. Between 1871 and 1881 the growth in population was 14.36 per cent., while in the number of houses inhabited, uninhabited, and building, there was an increase of seventeen per cent. It is an over production.

NATIONAL EXPOSITION OF RAILWAY APPLIANCES. — EXHIBIT OF PRESERVED TIMBER.

American Society of Civil Engineers,
127 East Twenty-third Street, New York, May 24, 1883.



APPRECIATING that the rapid destruction of the forests in this country, and the consequent advance in the price of timber, give increasing importance to its artificial preparation against decay, the American Society of Civil Engineers, some four years ago, appointed a committee to report upon the "Preservation of Timber."

This committee has been pursuing its labors ever since. It has sent out some 2,000 circulars; corresponded with some 350 persons; examined 104 patents; gathered such reports, pamphlets and publications as it could obtain; and generally collected all the information it could concerning experience in preserving timber in this country and in Europe.

The specimens now exhibited at the Chicago Exposition of Railway Appliances have been gathered by the Committee in the course of this investigation. They are shown in order to call attention to an important economy, which must soon be taken up by our railroads, and have been entered and arranged through the courtesy of the Western Society of Engineers of Chicago, which has kindly appointed a committee for this purpose.

The facts illustrated by these specimens may be briefly referred to: —

Although almost innumerable methods of preserving timber have been tried, there are but few which have been successful. Of these there are at least three, which, when well done, can be relied upon to prolong the life of wood exposed to the elements. These are: kyanizing, burnettizing and creosoting.

In Europe, these methods have passed beyond the domain of experiment. They there produce large economical results. In this country, the principal obstacle to wood preservation has been the cheapness of timber. It did not pay to inject it, because to be effective, the work must be well done, and the cost of effecting this has hitherto added an undue proportion to the price of our cheap woods. It was cheaper to let them rot and to renew them.

This condition of affairs is fast being removed by the rapid enhancement in the price of timber, and the proximate exhaustion of our more available forests; so that the time has probably arrived when it is not only economical but necessary, in many parts of the country, to prepare wood to resist decay in exposed situations.

It is believed that the selection of the proper method to be used, in any particular case, depends upon the proposed subsequent exposure of the timber (dry, wet, marine worms, etc.), and on the amount which its value (unprepared) admits of being expended upon it.

KYANIZING.

This consists in steeping the timber in a solution of corrosive sublimate. Details concerning it will be found in the circular letter issued by Mr. J. B. Francis.

For bridge and trestle timber, for fences in dry soil, and generally for wood exposed to the weather, but not to constant moisture, kyanizing may be relied upon.

The specimens of timber here exhibited, some of hemlock, exposed for forty years at Fort Ontario, Oswego, New York, and others of various kinds of timber exposed for twenty years at Lowell, in a sandy soil, by Mr. Francis, illustrate this point; while the samples of spruce, from the gate-boxes of the Lowell Water-Works, exposed in various soils for ten years, exhibit the effect of various degrees of moisture, and show that kyanized timber should be kept dry.

Kyanizing costs about six dollars per thousand feet, board measure. Under favorable circumstances it may be relied on to double or quadruple the life of the more perishable woods. Where and when it will pay to use this method, will depend upon the price of the timber and its subsequent exposure.

BURNETTIZING.

This consists in injecting the timber with a solution of chloride of zinc. It cannot be done successfully unless the wood is first seasoned, either naturally or artificially, to deprive it of moisture, and make room for the solution. This is forced in under pressure in closed cylinders, and is liable to wash out subsequently from the outer layers of the timber, unless retained in some way.

For cross-ties, and for timber exposed to weather and moisture, but not in very wet situations, burnettizing is probably, in view of the present price of timber, the most economical method to use. It costs, if well done, about five dollars per thousand feet, board measure, or some twenty to twenty-five cents a tie. It can be done for even less, but the result is not likely to be satisfactory.

The hemlock and maple ties here exhibited, which have been in

use fifteen years on the Lehigh and Susquehanna Railroad, and the oak tie, seventeen years in use on the Erie Railway, show the results which may be accomplished. In Germany, burnettized fir and beech ties average fifteen to eighteen years in the track, and this method has there become the favorite for ties, after extensive trial of all the others. This process should by preference be applied to the cheaper and more open-grained woods. It does not answer so well for bridge ties and timber, as burnettized timber is apt to check and split when dry and exposed to the sun.

It will probably not pay to burnettize ties where white oak, or other equally durable woods can be obtained at forty or forty-five cents a tie, but a recent investigation upon one of the Eastern trunk lines, about 1,000 miles long, has indicated the expectation that with white-oak ties at sixty-two cents each, and hemlock ties at twenty-eight cents each, an annual economy of $250,000 may be expected by burnettizing the hemlock, instead of laying down the oak unprepared.

CREOSOTING.

This consists in injecting the timber with hot creosote oil under pressure. The mode of application, and necessity for seasoning, are much the same as for burnettizing.

For timber in very wet situations, or exposed to marine worms, the best method to use is that of creosoting. It is the most effective, but also the most costly of the various processes.

When well done, it costs from $12 to $20 per 1,000 feet, board measure, or about fifty to sixty cents a tie. It is the favorite method used in England, and is there materially cheaper than here, in consequence of the lesser price of the oil.

The English ties here exhibited have been twenty to twenty-two years in use, and show perfect preservation. Ties and timber creosoted in this country are also shown, but have not had so long an exposure. It is probable they would be thrown out of service, by being cut into by the rail, long before they would decay.

Creosote oil is the only effective preservative known against the Teredo Navalis. All other substances have failed. How much of the oil must be injected to prove sufficient, probably depends upon the exposure. The English engineers specify ten or twelve pounds of oil per cubic foot. Some French engineers, and the American engineers who have had experience in the South specify from fourteen to eighteen pounds to the cubic foot, to be quite safe against the teredo. Each additional pound adds about $1.20 per 1, 000 feet, board measure, to the cost. Where it will pay to use this process depends upon a number of local circumstances and prices, which cannot well be enumerated here. It is very good but costly.

There are other substances, such as pyrolignite of iron, and sulphate of copper, which have proved fairly effective in preserving timber, but European experience seems to favor most burnettizing and creosoting. The sections of ties here exhibited, as from the Wabash Line, and from that of the New York, Pennsylvania and Ohio, were prepared by a modification of the sulphate of copper process.

The original patents on all the effective processes have long since expired. There are several patented modifications and modes of application, some valuable and some otherwise, which are still in force. Whether it will pay to use them each railroad will decide for itself. As a rule other methods than those which have been mentioned are either less effective, or are untried experiments.

It cannot be too strongly insisted upon that to be effective the work must be well done. The sap or moisture must be gotten out of the timber, and a sufficient amount of antiseptic be put in. If the solution exceeds a certain strength, the wood is rendered brittle and inelastic, so that both skill and honesty are required to accomplish success.

As an inspection subsequent to the doing of the work does not establish the fact whether it has been well done, the safe course for those who may decide to have some timber preserved, is either: —

1. To do the work themselves.

2. To contract it at a sufficient price to reliable parties, keeping an inspector at the works to note the daily working, when the magnitude of the order will warrant it, or

3. To contract the work on such terms that the profits shall depend upon the results accomplished in preserving the wood against decay.

As the Committee of Engineers is still pursuing its investigations, and is endeavoring to account for some anomalies which have come to its notice, it particularly desires to obtain the record of past experiments in this country (especially of failures), in order to ascertain whether the failure (or the success) was due to the preserving agent selected, to the quantity or strength of the solution injected, or to the mode of applying it. Correspondence is therefore solicited, together with such copies of reports or pamphlets as may be accessible.

The Committee of the American Society of Civil Engineers, on the "Preservation of Timber," is as follows: —

It expects to make its final report this year.

O. CHANUTE, Chairman, New York,	C. SHALER SMITH, St. Louis,
E. R. ANDREWS, New York,	J. W. PUTNAM, New Orleans,
E. W. BOWDITCH, Boston,	B. M. HARROD, New Orleans,
G. BOUSCAREN, Cincinnati,	Col. G. H. MENDELL, San Francisco.

The following is the Committee of the Western Society of Engineers, which is in charge of the present exhibit at Chicago: —

L. M. JOHNSON, Chairman, Chicago,
L. P. MOREHOUSE, Chicago,
G. A. M. LILJENCRANTZ, Chicago.

Please address all information, pamphlets, etc., to
Box 859, New York City. O. CHANUTE, Chairman.

SANITARY PRECAUTIONS AFTER FLOODS.

CROWNING STATUE OF FIRST PREMIATED DESIGN FOR A MONUMENT TO THE CONSTITUENT ASSEMBLY, AT VERSAILLES, FRANCE. M. FRANCOIS ARONT.

THE following instructions emanate from the *Comité Consultatif d'Hygiène Publique*, dated June 12, 1856, and from the *Conseil d'Hygiène Publique, etc., de Salubrité du Departement de la Seine*, dated January 5, 1883, both of France. They are of interest to us on account of last spring's Western floods.

Sanitation of Houses. — Habitations which have been invaded by the waters should receive special care, so that those whom the flood has expelled should not occupy them before they have been made sufficiently healthy for habitation.

They should first be cleaned out as quickly and thoroughly as possible, and freed from all dirt and débris deposited in their different parts by the water.

Continuous aeration and the most active ventilation are the best and most energetic agents of sanitation for houses.

To increase these as much as possible, where it can be done, a large fire should be maintained on the hearth, and the doors and windosw opened so that the light and heat of the sun may contribute their part to purifying the air.

At the same time care must be taken to dig a ditch ten to fifteen inches deep around each house, whose interior is in many cases below the level of the ground, which proceeding realizes one of the simplest and most active sewage systems.

It will also be well, after having torn down all plastering, which will be in a bad condition, to scrape to their bottom all joints in the walls, and to replaster them in the parts of the house most injured, and where bad deposits have principally accumulated. The floors, where such exist, should be carefully attended to, and the soil under them covered with a disinfecting substance, such as pounded charcoal or sand, or else with an impermeable material, such as flagging, paving-blocks, cement, etc. Where the house is several stories high, the top stories should be the first occupied.

Great precautions should also be followed in the treatment of certain articles of furniture, such as beds and mattresses, which must be renovated or replaced, and which should never on any account be used until thoroughly dried.

Sanitary treatment, such as adopted for houses, should be applied with no less vigilance to stables and barns, to prevent epizoötics, whose deplorable consequences there is no need to allude to here.

One peculiar feature it is important to note, though it can only be accidentally produced; it is the possible alteration of the water of wells and springs of potable water, in whose neighborhood matter in a state of decomposition may have been deposited, or piles of excrementitious and organic débris, or which may have been contaminated by the contents of privy-vaults. Attention should be directed to this danger.

To disinfect cellars into which, by agency of the inundations, the contents of privy-vaults may have penetrated, commercial sulphate of zinc may be used, either by sprinkling it in powder in the cellar, or by watering the ground when the water has gone down with a concentrated solution of this salt.

For the same purpose the solution of chloride of zinc, a disinfectant known as "St. Luke's Water," may be employed. It is in daily use in the civil hospitals.

The concentrated solution of sulphate of iron does well, but the disinfection is not so complete as with salts of zinc; it is, however, cheaper.

The last consideration is of little importance, because two kilogrammes (nearly five pounds) of zinc salt, costing less than one franc, are enough.

DOUBLE-THICK SOIL-PIPE.

June 13, 1883.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — I see that the Health Department in New York require extra heavy soil and waste pipe for buildings over sixty-five feet in height. This is excellent; now cannot they go farther, and adopt and enforce some regulation by which X pipe shall be properly made, with uniform thickness of metal all around, instead of being often enormously thick on one side and dangerously thin on the other? I have been told that some of the manufacturers of soil-pipe, the Mott Iron Works for example, regard X pipe as a fancy article, about which no particular care is requisite, provided the consumer does not detect the faults; and certainly some specimens of their pipe which I have seen look as if they had been cast flat, or the core allowed to look out for itself in some other way. We expect better things from the Mott Company, and as many of us architects are doing what we can to make the use of double-thick pipe general, it is peculiarly exasperating to find that as we get it, it is less to be depended upon than the single-thick, and that by reason of faults which it is almost impossible for us to detect without breaking the pipes. If no maker is disposed to guarantee the quality of

his pipes, it would not be very unreasonable, it seems to me, to have an inspector from the Department stationed at the large manufactories, whose stamp should be a certificate that they were properly made. If that were done, we could require the stamped pipe in our specifications, and would know whether we got it.

Very truly yours, DOUBLE HUB.

[We leave this for some one else to answer. — Eds. American Architect.]

GLASS ROOF-TILES.

WASHINGTON, June 14, 1883.

To the Editors of the American Architect: —

Gentlemen, — We believe we have had lately a circular from a firm who manufacture an article of glass, exactly of the thickness and size of a plate of roofing-slate, to be used with and to be hung like the slates, only that they are transparent and serve the purpose of skylights in pitched slate-roofs without attracting attention. If you can communicate or elicit through your columns the information sought for you will oblige CLUSS & SCHULZE, Architects.

[We believe the glass roofing-tiles are manufactured at Pittsburgh, Pa., and trust that some of our readers in that city will be able to furnish the specific information required. — Eds. American Architect.]

STUDIES FOR BEGINNERS.

CHICAGO, June 12, 1883.

To the Editors of the American Architect: —

Dear Sirs, — I beg your pardon for occupying your valuable time by asking an answer on the following by you. I am a young draughtsman (nineteen years of age) in a situation with an architect (where I earn sixty dollars a month), have acquired some knowledge of general business work, viz.: practical drawing in plans, elevations and details, but, as yet, know only a little of perspective, and to some extent superintendence. I studied Fergusson's "*History of Architecture*," and the works of M. Viollet-le-Duc; read the "*American Architect*," the "*Decorator and Art Furnisher*," etc., but have *not* any knowledge of the more difficult calculations necessary for construction, neither much ability in designing, *i. e.*, from my own inspiration. And now you would greatly oblige a subscriber to your paper by pointing out which is the best way to become a prominent member of the profession (but I have not much money to spend in this direction). And is there a chance anywhere in this country to earn something and at the same time attend a college, as this is sometimes the case in the old world? Very respectfully, P. MUELLER.

[The quickest and most economical way of obtaining a proper start in professional life is to enter some good architectural school, and pursue the course with all possible diligence, untrammelled and unimpeded by any work pursued outside the school at the same time. If circumstances require that our correspondent should adopt instead the slow and blundering process of teaching himself, he will find the three volumes of the South Kensington text-book on *Building Construction* the best work to begin upon. Trautwine's *Engineer's Hand-Book* will later give him the beginning of a great deal of useful knowledge, which he should fit himself to understand by a course of study in plane geometry and plane trigonometry. After this Greene's *Graphical Analysis*, in three small volumes, will, if he is prepared to comprehend it, carry him still farther in the science of construction. To learn design, the only way after a thorough drill in the classic orders and forms, is to practise it continually, trying all sorts of problems, with, if possible, the help of a good architect to criticise his efforts. The problems should be of the simplest kind, and should at first be treated with strict reference to classical precedent, leaving all attempts at original or mediæval treatment until the taste has been well disciplined to the elegance of the antique forms and proportions. As the habit of thinking in architectural forms becomes stronger, more difficult programmes may be undertaken, but always with caution. In the intervals of his studies in design, our correspondent, with others who have the same ambition, should perfect himself in drawing and sketching from plaster casts of sculpture and architectural detail, and as soon as he can handle charcoal and crayon well enough, should find or make for himself opportunities for drawing regularly from the life. From Phidias and the Italian cinque-centoists down to William Burges, this practice has been the fountain of originality and artistic excellence in the architecture of those nations and individuals who have followed it, and no one who has suffered himself to be once penetrated with the infinite charm of modelling and line, and breadth of light and shade, of the human form, will ever afterwards entirely lose, in the pursuit of vulgar architectural fashions, the sense of beauty which can alone give his work a permanent artistic value. — Eds. American Architect.]

"THE GOLDEN BOUGH."

NEWTONVILLE, MASS., June 19, 1883.

To the Editors of the American Architect: —

Dear Sirs, — In answer to the query of "Avernus" in your last issue, I would say that "*The Golden Bough*" was a branch of the tree of Proserpine, which, when plucked by mortals through the favor of the Fates, enabled them to visit and to return from the infernal regions with impunity. W. R.

NOTES AND CLIPPINGS.

COLOGNE CATHEDRAL. — Since work on the Cologne Cathedral was begun in 1864, nearly 11,000,000 marks have been expended. The last sheds about the structure are now being taken down and the terrace in front will speedily be put in order. When this has been done the noble pile will be considered finished within and without, the new flagging only excepted. For the tearing down of the incumbrances on the western side it is believed that a sum of more than 500,000 marks will be needed, a part of which will have to be raised by another lottery. — *Exchange.*

ARCHITECTURAL EXHIBITION, BRUSSELS. — The Central Society of Architecture, Belgium, is organizing an Architectural Exhibition, with the support of the Government and the Municipal College of the capital. It is arranged to be open from September 2 to 30 next, in the new Palais de Justice, Brussels. The society appeals to archæologists to lend for the retrospective section drawings of buildings erected previously to 1833, and designed either by Belgian or by foreign architects. Further particulars may be obtained from the secretary, M. Charles Neute, architect, 128, Rue Royale, Sainte-Marie, Brussels.

THE AILANTUS TREE. — Of trees introduced into the United States, says the *American Lumberman*, the ailantus is said to be a much more valuable one than is generally admitted. For posts no timber is better suited. The testimony of many farmers shows that it is nearly as good as locust, and for fuel is equal to oak. It is hardy, grows rapidly, and is said to be well adapted to growth on the prairies in the Western United States. In its native country (China) it often attains a height of 175 feet. The cork tree could also doubtless be cultivated in many parts of the United States with success. In 1859 a farmer in Wayne County, Mississippi, "planted some Spanish cork acorns received from the Department of Agriculture. Twelve years later he had trees from these acorns, the largest of which were 13 feet in height, 11 inches in diameter, and the cork around the body was more than one inch in thickness."

CHURCH OF THE SAVIOUR, MOSCOW. — The consecration of the Church of the Saviour, at Moscow, one of the most brilliant features connected with the coronation, took place yesterday. The Czar and Czarina, with the rest of the imperial family, the foreign ambassadors, and an immense crowd of people, were present. This enormous and magnificent temple — "Krahm Spaseetelya" in the vernacular — was begun so far back as 1833. Nearly four thousand laborers for a month were employed in digging out the ground for the foundations, and considerable energy was displayed in building the base, but after a while operations languished and the work went on by fits and starts. The height of the structure is 288 feet, and the style of architecture is the Russo Byzantine, the building being in the form of a Greek cross surmounted by five cupolas, one on each corner, and a large one, or dome in the centre. The roof and the framework of the cupola weigh 1,800 tons, and the gilding on the latter consumed more than half a ton of gold leaf. Above the central cupola is a massive bronze cross, which can be seen from every part of Moscow. The height of its dome is 369 feet. If the celebrated tower of Ivan Veliki were placed under this dome its cross would come fourteen feet short of reaching its inner surface. The Usspensky Cathedral might stand within this church. The bronze frames of the windows, each nine yards high, weigh nearly three tons, and the hinges of the bronze doors have to support five and one-quarter tons of metal. Inside the walls are gorgeously decorated in the usual style of Russian churches, and contain a number of jasper pillars, each of which cost upwards of $13,000. The total cost of this wonderful building is estimated to exceed 20,000,000 rubles, or nearly $15,000,000. But this is not all. Recently the architect reported that a block of houses in proximity to the temple was detrimental to one of the aspects, and the synod voted $1,000,000 to demolish the buildings and to construct in their place a terrace. It must not be forgotten that this is the second great cathedral which Russia has raised during the last sixty years, the famous one of St. Isaac's, in St. Petersburg, having been begun in 1819, and consecrated in 1858, after an expenditure of 36,000,000 rubles, or $26,000,000. A third cathedral, not quite so large, is also rising at Nijni Novgorod, and will involve an outlay of $10,000,000 before completion. — *Philadelphia Telegraph.*

RAGUSA. — There is no little city in Europe, actually none, so curious, so interesting, as Ragusa. Persons better acquainted with that coast have told me that in quaintness other Slav-Venetian towns may challenge it. My own experience of Cattaro and Antivari confirms this statement in some measure. But Ragusa is unique in memorials of ancient state and wealth, and above all in its story. Of that story, in truth, I have learned but just enough to see that most students read it in a different version. It is one, however, of special fascination. This is the antique capital of that single branch in the Southern Sclav family which has yet proved itself European in any sense other than geographical. It was a republic, the rival of Venice in arms and arts, commerce and enterprise, for ages. The winged lion finally overcame and enslaved it, but Ragusan patriots will not admit that their forefathers were conquered by Venice. It was the shadow of the Turk that vanquished them, the iron barrier crushing their small territory, the incessant threats of a malicious savage. I have no opinion on that matter. The legend of Ragusa thrills one like that of a mysterious and silent ruin. Be it remembered that this small, sleepy town gave us the fine word "argosy," for a great ship stored with costliest goods. From one stately gateway in the massive walls to the other is but a hundred and fifty yards at most, but at every yard one may pause to admire. Just within, on the right hand, is a fountain, somewhat of the Turkish style. On market days and holidays it is a pretty sight when the girls assemble at this place. Every village has its peculiarity of dress, mostly bright in color, but the Herzegovinian is so supremely charming that it kills all others. The robe, of coarse black cloth, should be properly called a chemise; it has little ornament. But from the round "turban" cap descends a veil, framing a face often pretty, always pleasing to the eye, thus set off. This drapery is of thick white material, falling to the bottom of the skirt, and so large that a girl can wrap her whole body therein if she please. World-wide travel has not shown me a dress so becoming in severe simplicity. Opposite to the fountain is a church, and then the broad, fine street, smoothly paved, stretches to the other gate. Its blocks of stone houses date, they tell me, from the fourteenth century; saving the tones which age alone can give, they might have been raised yesterday. Tall, solid, exactly alike and precisely aligned, they present that ideal of street architecture which we are laboriously trying to introduce; but we shall not easily match these handsome structures. Between each block endless flights of steps climb the mountain side, with a narrow landing at intervals. — *Belgravia.*

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

BUILDING PATENTS.

[Printed specifications of any patents here mentioned, together with full detail illustrations, may be obtained of the Commissioner of Patents, at Washington, for twenty-five cents.]

279,150. FIRE-ESCAPE. — Charles C. Griswold, Chicago, Ill.

279,155-156. WINDOW-SLAT ADJUSTER. — George Hayes, New York, N. Y.

279,167. COMBINED WINDOW-PLATFORM AND FIRE-ESCAPE. — Thomas Jarvis, Chicago, Ill.

279,175. FIRE-ESCAPE. — Christian Meyer, St. Paul, Minn.

279,183. APPARATUS FOR OPERATING SELF-FLUSHING CLOSETS. — Thomas Prosser, Montreal, Quebec, Can.

279,186. FIRE-ESCAPE. — Thomas W. Ricker, Boston, Mass.

279,190. SURVEYOR'S STEEL CHAIN-TAPE AND REEL. — Fred J. Sager, Marysville, O.

279,204. AUGER. — James Swan, Seymour, Conn.

279,207. PIPE-CUTTER. — Caleb C. Walworth, Boston, Mass.

279,218. DEVICE FOR COVERING WATER-CLOSET SEATS. — Michel Bonnefond, Paris, France.

279,249. GIRDER AND BEAM. — Peter H. Jackson, San Francisco, Cal.

279,260. BENCH-VISE. — Mortimer G. Lewis, Lowville, N. Y.

279,271. WRENCH. — Frederick E. Okie, Linwood, and J. Fourestier Simpson, Philadelphia, Pa.

279,287. CLAPBOARD-SAWING MACHINE. — Horace Taber, Manistee, Mich.

279,305. HOISTING-APPARATUS. — Wm. W. Wythe, Red Bank, N. J.

279,316. PLUMB-BOB. — George C. Avery, Louisville, Ky.

279,334. DOOR-BOLT. — Charles Clark, Smyrna, Tenn.

279,347-348. FIRE-ESCAPE. — Charles E. Creecy and Alexander B. Burns, Washington, D. C.

279,357. ART OF MANUFACTURING PORTLAND CEMENT. — Edward J. De Smedt, Washington, D. C.

279,364. WINDOW. — Milton L. Edmunds, Danbury, Iowa.

279,374. CATCH-BASIN. — Thiebeaud Gallat, Cincinnati, O.

279,379. METALLIC PIVOT FOR WINDOW-BLIND SLATS. — Benjamin F. Hall, Lansing, Mich.

279,402. MOULD FOR ROOFING-TILES. — Lorenzo Lane and Laurin D. Woodworth, Youngstown, O.

279,409. ALARM-LOCK. — Edouard J. Masseron, Paris, France.

279,422. CONSTRUCTING TOWERS. — Edward J. O'Beirne, Evansville, Ind.

279,423. IMITATION STAINED-GLASS. — Eugene E. Oudin, New York, N. Y.

279,425. WEATHER-STRIP. — Lucius Parmele, Mackinaw, Ill.

279,433. FIREPLACE. — Henry Rembert, Willis, Tex.

279,442. BALANCE DOOR-HANGER. — Roger S. Henderson and Amos Sanders, Philadelphia, Pa.

279,443. COMBINATION-LEVEL. — James H. Sands, Houston, Tex.

279,460. PARALLEL DIVIDERS. — James B. Tetley, Pittsburgh, Pa.

279,465. GLASS ROOF. — William Ward, Cleveland, Ohio.

279,487. ROOFING-SHINGLE. — Henry Anwyl Jones, Brooklyn, N. Y.

279,488. TOOL FOR DRESSING STONE. — Hiram A. Kimball, Philadelphia, Pa.

279,501. WEATHER-STRIP. — Thomas S. Pruner, Sioux Falls, Dak.

SUMMARY OF THE WEEK.

Baltimore.

PARSONAGE. — Messrs. J. A. & W. T. Wilson, architects, have prepared drawings for a two-st'y brick and stone parsonage for Christ Church, on St. Paul St., between Eager and Chase Sts.; cost, $14,000.

DWELLING. — Mrs. Green is about to build a three-st'y brick and Belleville brownstone house, cor. Park Pl. and Milton St., and a two-st'y brick stable in its rear, from designs by Messrs. Wyatt & Sperry, architects; John J. Brown, builder.

BUILDING PERMITS. — Since our last report twenty-three permits have been granted, the more important of which are the following: —

Louis Kroeger, 3 three-st'y brick buildings, w s Schroeder St., between Pratt and Lombard Sts.

Elias Weal, 2 two-st'y brick buildings, e s China Alley, between Hamburg and Fremont Sts.

Eliza Simpson, three-st'y brick building, 74 Granby St., between Exeter St. and Central Ave.

O. Green, three-st'y brick building, n e cor. Park Ave. and Wilson St.

Geo. R. Presstman, 5 two-st'y brick buildings, s s Lancaster St., between Chesapeake and Dawson Sts., and 5 two-st'y brick buildings, e s Dawson St., between Lancaster and Hutchins Sts.

Henry Bach, 3 two-st'y brick buildings, e s Fulton St., s of Pratt St.

Nicholas Meeth, three-st'y brick building, w s Hanover St., between Fort Ave. and Clement St.

Michael Kane, three-st'y brick building, w s Hanover St., between Fort Ave. and Clement St.

Boston.

HOUSES. — A three-st'y house, 28′ x 80′, is being built on Beacon St., for Mr. R. D. Evans; Leander Greeley and T. J. Whidden are the contractors for the carpenter and mason work respectively; Messrs. Allen & Kenway, of Boston, are the architects.

A house for Mr. C. T. Hubbard is now being built on Marlboro St., from plans of Messrs. Allen & Kenway, of Boston; materials, brick, stone and terra-cotta, 26′ x 65′; Vinal & Dodge, masons; McNeil Bros., carpenters.

BUILDING PERMITS. — *Brick.* — *Maitland St.*, Ward 22, for Sarah E. Lawrence, family hotel, 32′ and 37′ x 61′ and 64′, three-st'y flat; I. and H. M. Harmon, builders.

Commonwealth Ave., cor. Fairfield St., Ward 11, for W. G. Salstonstall, dwell., 30′ x 78′ 6″, four-st'y flat; Woodbury & Leighton, builders.

Wood. — *Lamartine St.*, near Wyman St., Ward 23, for James A. Frampton, dwell., 33′ x 33′, three-st'y flat; Jacob Luippold, builder.

Roxbury St., No. 249, rear, Ward 19, for Michael Conroy, dwell., 25′ 6″ x 38′, three-st'y flat; Thomas O'Grady, builder.

Brooklyn.

BUILDING PERMITS. — *Dean St.*, n s, 173′ w Grand Ave., 1-st two-st'y frame dwells., gravel roofs; cost, each, $10,000; owner, M. E. Fowler, 8 Verona Pl.; architect and builder, L. Fowler.

Foot of Seventeenth and Eighteenth Sts., 400′ w Third Ave., one-st'y frame shed; cost, $3,000; owners, Nelson Bros., 514 Hamilton Ave.; architect, C. B. Fish; builder, C. E. King.

Clinton Ave., e s, 135′ 4″ Gates Ave., three-st'y brownstone front dwell., tin roof; cost, $14,000; owner, D. C. Porter, 261 Waverly Ave.; architect, J. Mumford; builders, C. Cameron and Wright & Brook.

Pacific St., s s, 250′ e Smith St., four-st'y and basement brick stable and factory, tin roof; cost, $20,000; owners, Figge & Bro., Atlantic Ave., cor. Smith St.; architect, J. Mumford; builders, J. H. O'Rourke and W. Lang.

De Kalb Ave., n s, 200′ w Tompkins Ave., 3 four-st'y brick stores and dwells., gravel roofs; cost, each, $12,000; owner, H. O. Pearce, Willoughby Ave., cor. Throop Ave.; architect, M. J. Morrill; mason, J. Campbell.

Halsey St., s s, 300′ w Reid Ave., 3 two-st'y brownstone front dwells., gravel roofs; cost, each, $4,500; owner and builder, Peter Donlon, 724 Sackett St.; architect, J. E. Styles.

Brooklyn Ave., s w cor. Dean St., 4 three-st'y brownstone front dwells., gravel roofs; cost, each, $9,500; owner, Jordan L. Snediker, Halsey St.; architect, A. Hill; builders, J. Rickard and A. Miller.

Humboldt St., e s, 20′ n Withers St., three-st'y frame tenement, tin roof; cost, $3,800; owner, Daniel Keefe, 591 Grand St.; architect, A. Herbert; builder, J. Schoch.

Lefferts Pl., s w cor. Franklin Ave., 2 three-st'y and basement brownstone front dwells., tin roofs; cost, $14,000 and $7,500; owner, A. Tredwell, 540 Franklin Ave.; architect and builder, J. S. Frost.

Franklin Ave., w s, 80′ s Lefferts Pl., three-st'y brownstone front dwell.; cost, $6,000; owner, etc., same as last.

Lafayette Ave., s s, 290′ e Broadway, two-st'y brick dwell., tin roof; cost, $4,780; owner, F. Y. Bohannon, 989 Broadway; architect and builder, G. H. Bohannon; mason, W. Potivar.

Delevan St., s s, about 138′ e Richards St., five-st'y brick factory, iron roof and cornice; cost, $20,000; owner, Cheesbrough Manufacturing Company, State St., cor. Bridge St., New York; architect, A. Hatfield.

Clermont Ave., e s, 20′ n Greene Ave., five-st'y granite front dwell., slate and metal roof; cost, $50,000; owner, R. C. Cathedral Corporation; architect, P. C. Keely.

Wolcott St., No. 60, n s, 80′ w Richards St., three-st'y frame tenement, tin roof; cost, $4,300; owner, Patrick Banks, 49 Wolcott St.; architect, G. Damen; mason, P. McQuinn.

Conover St., No. 233, e s, 100′ n Elizabeth St., four-st'y double tenement, tin roof; cost, $8,200; owner, Julius Fehlhaber, on premises; architect, P. Radermann; masons, P. Kelly & Son.

Fourth Pl., No. 62, three-st'y and basement brick tenement, tin roof; cost, $8,000; owner, Jas. Cross, 138 Luqueer St.; architect, G. Damen; mason, P. McQuinn.

President St., s s, 192′ w Hoyt St., 4 three-st'y and 1 two-st'y and basement brownstone front dwells., gravel roofs; cost, each, $4,500; owner, Chester Bedell, 237 Smith St.; architect and builder, Theo. Pearson; mason, Walton Smith.

Norman Ave., No. 112, near Leonard St., four-st'y frame store and double tenement, gravel roof; cost, $6,000; owner, Wm. Lehing, 116 Norman Ave.; architect, J. P. Leo; builders, Randall & Miller.

Kent St., s s, 150′ e Marcy Ave., 3 three-st'y brownstone front dwells., tin roofs; cost, each, $5,500; owner, architect and builder, Thos. B. Saddington, 263 Hewes St.

Middleton St., s s, 260′ e Harrison Ave., 4 three-st'y frame double tenements, tin roofs; cost, each, $4,500; owner, B. Bossert, Harrison Ave., near Lynch St.; architect, J. Platte; builders, J. Auer and F. Herts.

Union St., s s, 190′ w Fifth Ave., also, *President St.*, n s, 190′ w Fifth Ave., 12 two-st'y brick dwells., tin roofs; cost, each, $2,500, owner, architect and builder, E. C. Squance, 238 Eleventh St.

Chicago.

STORES. — C. Chapman, architect, has on hand five-st'y building, 30′ x 100′, on Michigan Ave., n of Randolph St., for Thomas Hoyne, pressed-brick, stone finish.

By same architect, 2 stores for P. Ryan, 682 and 684 West Indiana St.

Also, same architect, stores, cor. Thirty-fourth and Halsted Sts., and cor. of Robey and West Indiana Sts.

BUILDING PERMITS. — E. Jalor, two-st'y brick flats, 21′ x 48′, 66 Wesson St.; cost, $3,000.

Lindahl & Johnson, two-st'y brick flats, 22′ x 70′, 148 Oak St.; cost, $5,000.

Aug. Sickel, two-st'y store and dwell., 25′ x 68′, 879 North Halsted St.; cost, $3,000.

H. Wild, 2 two-st'y basement dwells., 44′ x 73′, 481-483 Adams St.; cost, $7,000.

A. K. W. Schmidt, two-st'y store and dwell., 25′ x 60′, 715 Ogden Ave.; cost, $4,000.

John Riddle, two-st'y dwell., 22′ x 50′, 3455 Dearborn St.; cost, $4,000.

G. M. Gungrich, two-st'y brick moulding-factory, 75′ x 75′, 15-19 Armour St.; cost, $6,800.

G. Sporrer, three-st'y dwell., 25′ x 68′, 507 North Clark St.; cost, $7,500.

Jno. Sladik, two-st'y basement dwell., 21′ x 34′, 827 Allport Ave.; cost, $3,000.

James O. Callaghan, three-st'y stores and flats, 49′ x 63′, Halsted St., cor. Thirty-fourth St.; cost, $7,000.

Jno. Cudahy, two-st'y brick barn, 27′ x 58′, 3243 Wabash Ave.; cost, $3,000.

J. Parker, two-st'y basement dwell., 22′ x 45′, 44 O'Brien St.; cost, $3,000.

A. Chemelek, two-st'y basement dwell., 21′ x 58′, 737 Loomis St; cost, $3,200.

F. Fraubmann, three-st'y dwell., 25′ x 70′, 515 North Clark St.; cost, $10,000.

W. W. Cole, two-st'y basement dwell., 25′ x 96′, 284 Rush St.; cost, $10,000.

John Scully, three-st'y basement store and dwell., 24′ x 74′, 511 South Halsted St.; cost, $7,000.

J. Keigher, two-st'y store and dwell., 25′ x 60′, 428 Indiana St.; cost, $4,000.

Catholic Bishop of Chicago, three-st'y basement academy, 90′ x 113′, s w cor. Park Ave. and Oakly Sts.; cost, $30,000.

Isaac Tomlinson, four-st'y brick factory, 50′ x 123′, Arnold St., near Twenty-third St.; cost, $20,000.

C. O. Gleeson, 2 two-st'y dwells., 33′ x 48′, 3624-3626 Stanton Ave.; cost, $4,000.

Agatha R. Ward, three-st'y brick factory, 60′ x 70′, 110-112½ South Jefferson St.; cost, $15,000.

Jos. Koerper, two-st'y dwell., 22′ x 60′, 582 Wells St.; cost, $3,000.

M. Gaenselow, three-st'y dwell., 32′ x 67′, 603 Dearborn St.; cost, $10,000.

Herbert Cassard, three st'y brick stores and dwell., 66′ x 105′, 3300-3308 South Water St.; cost, $35,000.

Paul C. Cassius, two-st'y store and dwell., 25′ x 110, 260 Lincoln Ave.; cost, $6,000.

Carl Hochstadt, three-st'y dwell., 22′ x 57′, 569 Wills St.; cost, $5,000.

Dr. Knox, two-st'y dwell., 22′ x 50′, 610 Fulton St.; cost, $4,000.

W. E. Hall, three-st'y stores and flats, 71′ x 90′, 207 and 209 Thirty-first St.; cost, $21,000.

H. Stautz, two-st'y stores and dwell., 25′ x 45′, 2725 Wentworth St.; cost, $3,200.

Chas. Follinsbee, 2 two-st'y dwells., 33′ x 40′, 469 Warren Ave.; cost, $3,500.

John Kedzie, 2 four-st'y stores and dwells., 44′ x 72′, 471-473 Madison St.; cost, $22,000.

H. Hemmelgorn, 2 two-st'y dwells., 36′ x 50′, Fullerton Ave., cor. Larrabee St.; cost, $14,000.

J. A. Sweet, two-st'y dwell., 27′ x 66′, Warren Ave.; cost, $8,000.

J. G. Owsley, two-st'y dwell., 20′ x 63′, Adams St., near Robey St.; cost, $8,000.

J. Jacobson, 4 cottages, 20′ x 32′ each, 781-785 Seymour St.; cost, $4,000.

C. Busby, 3 two-st'y dwells., 64′ x 69′, 11-15 Carpenter St.; cost, $10,000.

C. Busby, three-st'y basement store and dwell., 24′ x 67′, 752 West Madison St.; cost, $8,000.

Marshall & Paulett, 6 two-st'y flats, 63′ x 123′, 1029-1039 Adams St.; cost, $32,000.

Mrs. L. Morrison, two-st'y dwell., 32′ x 64′, 1518 Washington St.; cost, $15,000.

S. E. Gross, 8 cottages, Washington Ave.; cost, $8,000.

S. E. Gross, 7 cottages, Washington Ave.; cost, $7,700.

S. E. Gross, 5 cottages, 20′ x 30′ each, Iowa St., near Chicago Ave.; cost, $5,500.

J. H. Cummings, three-st'y dwell., 25′ x 70′, 519 Dearborn Ave.; cost, $16,000.

S. F. Requa, three-st'y brick flats, 44′ x 68′, Jackson St., w of Aberdeen St.; cost, $12,000.

J. W. Thomas, 4 two-st'y dwells., 38′ x 72′, 215 South Hoyne Ave.; cost, $8,000.

J. L. Waller, two-st'y store and flats, 40′ x 50′, Indiana St., cost, $3,000.

Wm. Waller, 6 two-st'y stores and flats, 50′ x 120′, Indiana St.; cost, $15,000.

John Dasso, two-st'y flats, 20′ x 50′, 203 North Union St.; cost, $4,000.

D. Harry Hammer, three-st'y store and flats, 50′ x 64′, 3734-3738 State St.; cost, $15,000.

H. Menke, two-st'y dwell., 22′ x 52′, 669 Lincoln St.; cost, $3,000.

H. Pepsian, three-st'y flats, 22′ x 60′, 111 Wade St.; cost, $3,000.

Cincinnati.

BUILDING PERMITS. — Thomas Mead, repair three-st'y brick building, 3 2 West Fourth St.; cost, $2,500.

John Waw, two-st'y brick dwell., cor. Brown St. and Marshall Ave.; cost, $15,000.

Wm. Lawler, two-st'y brick dwell., cor. Pine and Tremont Sts.; cost, $2,900.

F. Reynolds, two-st'y brick dwell., 110 York St.; cost, $3,000.

Mrs. M. Hoffmeister, three-st'y brick building, 178 Pearl St.; cost, $6,100.

Miller, Dubrul & Peters Manufacturing Company, five-st'y brick factory, Pearl St., near Ludlow St.; cost, $15,000.

Jos. Becker, two-st'y brick dwell., 107 Loth St.; cost, $3,500.

Ten permits for repairs; cost, $7,000.

Cleveland.

BANK-BUILDING. — Corner Superior and Bank Sts., brick and stone, fire-proof; cost, $175,000; Gordon Lloyd, of Detroit, architect; Robinson & McAllister, contractors.

Boiler-House.—For the Cleveland Water-Works, 45′ x 85′, smoke-stack, 132′; cost, about $20,000; John Whitelaw, engineer and superintendent; F. C. Bate, architect.

Dwellings.—On Prospect St., for Dr. Beckwith, frame and brick dwell.; cost, $13,000; Coburn & Barnum, architects.

On Clinton St., for Jno. Bousfield, a stone double house; cost, $18,000; Coburn & Barnum, architects.

Four dwells. on Sibley St., cor. Cedar Ave., for Price Bros.; cost, $5,000 each; J. M. Blackburn, architect.

Brick dwell., on Summit St.; cost, $9,000; Thos. Linas, contractor; Samuel Lane, architect.

Dwelling and Stores.—On Superior St.; cost, $6,000; for J. M. Stewart, Esq.; N. P. Charlotte, architect.

Reservoir.—For the Cleveland Water-Works, low-service reservoir, on Fairmount, Baldwin and Quincy Streets and Woodland Hills Ave. The capacity will be 70,000,000 gallons; cost, about $900,000; work to be let by the cubic yard; John Whitelaw, engineer and superintendent.

School-Houses.—Corner of Marion and Sked Sts., brick and stone school-house; cost, $16,000; Jno. Eisenman, architect.

Case School of Applied Science, on Euclid Ave.; cost, $175,000; Thos. Linas, contractor; Jno. Eisenman, architect.

Alterations to dwell. on Clinton St., for James Sprankle; cost, $4,000; Jno. S. Watterson, contractor; F. C. Bate, architect.

Denver, Col.

Building Permits.—During May, the Building Inspector of this city granted permits for the erection of 69 buildings, aggregating in cost $202,485.

W. C. Lothrop was granted a "special permit by the Council," to erect a three-st'y brick block, 90′ x 100′; cost, $50,000; E. P. Brink, architect; A. J. Kelley, builder, situated cor. Lawrence and Eighteenth Sts.

Kerstens & Peters, two-st'y brick building, stone basement, 35′ x 55′; cost, $8,000; Broadway, between Pine and Deer Sts.; Wm. Quayle, architect; J. C. Dowling, builder.

W. G. Sprague, two-st'y and basement brick residence, 25′ x 65′; cost, $7,500; Champa St., between Thirteenth and Fourteenth Sts.; J. H. Littlefield, architect.

J. G. Thatcher, two-st'y brick dwell., with stone basement, 46′ x 60′; cost, $10,500; Sherman Ave., between East Sixteenth St. and Colfax Ave.; F. E. Edbrooke & Co., architects; Buell & Buell, builders.

Detroit.

Building Permits.—E. H. Candler, brick house, Fourth St.; cost, $2,500.

Wm. Scott & Co., addition to stove-works, Jefferson Ave.; cost, $8,000.

G. W. Vinton & Co., brick house, Cass Ave., No. 405; cost, $11,000.

E. S. Moore, frame house, 40 Brainard St.; cost, $2,800.

Peter Dederichs, 5 brick stores, Nos. 122 to 130 Gratiot Ave.; cost, $28,000.

S. E. Smith, frame house, Pine St.; cost, $3,500.

W. G. Vinton & Co., addition to brick house, Charlotte St.; cost, $3,500.

A. J. Smith, frame house, No. 852 Cass Ave.; cost, $3,000.

Alex. Hamilton, frame house, 305 Fifth St.; cost, $3,500.

John La More, frame house, Fourteenth St.; cost, $4,100.

Lloyd, Llewellyn & Co., repairs to store, Jefferson Ave.; cost, $7,000.

E. A. Walshe, brick house, Watson St.; cost, $6,000.

R. Helson, brick house, Woodward Ave.; cost, $11,500.

Julius Hess, additions to factory, McDougall Ave.; cost, $15,000.

Jersey City.

Building Permits.—J. McWilliams, owner, frame building, 50′ x 100′, at foot of Morris St.

Adams Express Co., owner, frame building, 100′ x 200′, 158 to 164 Bright St. and 355 to 367 York St.

M. Loberts, builder, frame building, 20′ x 75′, 91 Bright St.

J. Gormam, owner, frame building, 25′ x 38′, 69 Hudson St.

Fox & Drummond, owners, frame building, 20′ x 40′.

D. Mulqueeney, owner, frame building, 20′ x 30′, 27 Twelfth St.

New York.

Apartment-Houses seem to continue to be the favorite speculation in building, and among those now being planned are:—

Eight, brick and stone, 25′ x 80′ each, five stories high, to be built on the cor. of Ninety-eighth St. and Second Ave., for Mr. Chas. White, from designs of Mr. Chas. Baxter; to cost $164,000.

Two five-st'y, 33′ x 90′ and 34′ x 85′, to be erected on the s e cor. of Eighth Ave. and Fifty-fifth St., for Messrs. Loew Bros., from designs of Messrs. Thom & Wilson.

Seven brownstone, three stories and basement, to be built on the south side of Seventy-second St., w of Second Ave., for Mr. Jas. Fettretch; Messrs. Cleverdon & Putzel, architects; cost, about $100,000.

Ten-st'y brick and stone, to be built on One Hundred and Twenty-third St., cor. St. Nicholas and Eighth Aves., with a frontage of 152′ on One Hundred and Twenty-third St.; Mr. R. Wilson, owner; Mr. D. T. Atwood, architect; cost, about $150,000.

Four five-st'y brick, 25′ x 65′ each, to be built on the n w cor. of Second Ave. and Ninety-eighth St., for Mr. Wm. Hall; to cost $60,000; Mr. J. H. Valentine, architect.

Two brick, to be built at Nos 285 and 287 West Sixtieth St., for Mary J. Largan, from designs of Mr. S. W. Prodgers.

Church.—The Broadway Methodist Episcopal Society proposes to erect a church on the n e cor. of the Boulevard and Ninety-ninth St.

Houses.—Three double houses, with frontages of 44′, are to be built on One Hundred and Thirtieth St., between Cliff and Ninth Aves., from designs of Mr. Wm. Schickel, for the Sisters of the Convent of the Sacred Heart.

Eight houses, 25′ x 65′ each, are to be built for Mr. George Kuhn, on the north side of Sixty-seventh St., 200′ w of Eleventh Ave.

Building Permits.—*Tenth Ave., Nos. 543 and 545*, five-st'y brick tenements and stores, tin roofs; cost, $34,000; owner, Henry A. Childs, 219 West Forty-Second St., and others; architect, Daniel Burgess.

Greenwich St., e s, from Vestry St. to Debrosses St., seven st'y brick store, tin roof; cost, $200,000; owners, Trinity Church Corporation, S. V. Cruger, comptroller, 5 Church St.; architect, Charles C. Haight; builders, Masterton & Stevenson and Lewis H. Williams.

Sixty-first St., s s, 125′ w Tenth Ave., 5 five-st'y brownstone front tenements, tin roofs; cost, each, $23,000; owner, John Richards, 1½ Rector St.; architect, C. F. Ridder, Jr.

West Fifty-fourth St., No. 132, three-st'y brick stable, gravel roof; cost, $9,000; owner, Wm. B. Ross, 60 East Twenty-first St.; architect, L. N. Crow.

West One Hundred and Twenty-fifth St., Nos. 108 *and* 110, four-st'y brick flat and store, tin roof; owner, E. H. M. Just, 35 Great Jones St.; architect, M. E. Merritt.

Third Ave., e s, cor. One Hundred and Sixty-eighth St., two-st'y brick office, tin roof; cost, $3,000; owner, David Mayer, 1304 Fifth Ave.; architects, H. J. Schwarzman & Co.; builders, List & Lennon and T. J. Duffy.

Seventy-fifth St., n s, 150′ w Fourth Ave., 3 four-st'y brownstone front dwells., tin roofs; cost, each, $14,000; owners and architects, Samuel D. Bussell, 106 East Thirty-first St., and Joseph B. Wray, 218 East Thirty-second St.

Sixty-first St., s s, 350′ w Tenth Ave., 2 five-st'y brownstone front tenements, tin roofs; cost, each, $18,000; owner, James Philp, 1667 Broadway; architect, J. O'Rourke; builders, Stone & Healey.

Eighty-fifth St., n s, 200′ w First Ave., five-st'y brownstone front tenement, tin roof; cost, $16,000; owner, Jacob L. Maschke, 21 Delancey St.; architect, John C. Burne.

East One Hundred and Twenty-fourth St., No. 77, three-st'y and basement brownstone front dwell., tin roof; cost, $12,000; owner, Chas. Welde, 413 East One Hundred and Twenty-fourth St.; architects, Babcock & McAvoy; mason, Benj. Weeks.

Elizabeth St., No. 30, rear, two and part three st'y brick stable, gravel or tin roof; cost, $6,000; owner, John Maesel, on premises; architect, Wm. Jose.

West Sixteenth St., Nos. 410, 412 *and* 414, one-st'y brick warehouse and ale vault, gravel composition roof; cost, $22,000; owner, Thos. McMullen, 26 West Thirty-third St.; architect, Augustus Hatfield.

East Eighty-first St., Nos. 210 *and* 212, 2 five-st'y brick tenements, tin roofs; cost, each, $16,000; owner, Peter Seebald, 1314 Lexington Ave.; architect, John Brandt

Courtland Ave., w s, 25′ s One Hundred and Forty-ninth St., four-st'y brick tenement and store, tin roof; cost, $12,000; owner, Bernard Joost, 603 East One Hundred and Thirty-fifth St.; architect, Frank E. Verder.

First Ave., No. 171, five-st'y brick with iron front store, tin roof; cost, $18,000; owners, R. & O. Goelet, 261 Broadway; architect, Jos. M. Dunn; mason, Michael Reid.

Sixty-ninth St., n s, 125′ w Tenth Ave., two-st'y and basement brick dwell., tin roof; cost, $6,000; owner, Harriet I. Potter, 507 West Sixty-ninth St.; architect, Andrew Spence.

Ninety-fourth St., s s, 125′ w Second Ave., ten buildings; *Ninety-third St.*, n s, 125′ w Second Ave., six buildings, 16 five-st'y brick tenements, tin roofs; cost, each, $15,000; owner, Michael Duffy, 156 East One Hundred and Second St.; architect, Andrew Spence.

Sixty-first St., s w cor. Madison Ave., 5 four-st'y brownstone front dwells., tin roofs; cost, total, $171,000; owners, architects and builders, Chas. Buek & Co., 63 East Forty-first St.

Third Ave., Nos. 1578 *and* 1580, 2 five-st'y brick flats and stores, tin roofs; cost, each, $19,000; owners, Emily C. Watson and Laura B. Rhinelander, by Chas. E. Rhinelander, attorney, 105 East Eighteenth St.; architect, Geo. B. Post; builders, Peter Tostevin's Sons and Peter Loonan.

Broome St., n e cor. Wooster St., six-st'y brick store, tin roof; cost, $49,000; owner, Henry C. Thatcher, Yarmouth, Mass.; architect, John F. McIntyre; builders, Alex. Brown, Jr., and John F. Moore.

Eighty-sixth St., s s, 330′ w Third Ave., 2 five-st'y brick flats, tin roofs; cost, each, $25,000; owner, Wm. J. Gessner, 1722 Madison Ave.; architects, Thom & Wilson; done by days' work.

Eighty-sixth St., s s, 358′ 10″ w Third Ave., five-st'y brick flat, tin roof; cost, $19,000; owner, architects, etc., same as last.

Brook Ave., e s, 5′ n One Hundred and Forty-fourth St., 3 two-st'y frame dwells., tin roofs; cost, each, $2,500; owner and builder, Thos. H. Keely, 1258 Second Ave.

West Fifteenth St., No. 30, four-st'y brick dwell., tin roof; cost, $14,000; owner, Cornelia Burrows, by Edward Mitchell, agent, 45 West Fifty-fifth St.; architect, Chas. E. Hadden.

East Eighty-second St., Nos. 233 *and* 235, 2 five-st'y brownstone front tenements, tin roofs; cost, each, $18,000; owner, Eva Muller, 446 East Seventy-sixth St.; architect, John Brandt.

Eighty-eighth St., n s, 210′ e Third Ave., 4 five-st'y brownstone front tenements, tin roofs; cost, each, 17,500; owner, Jno. J. MacDonald, 1321 Park Ave.; architect, John Brandt.

One Hundred and Forty-fifth St., s s, 175′ w St. Ann's Ave., three-st'y frame tenement, tin roof; cost, $4,500; owner, Dennis Mannion, 281 Eleventh Ave.; builder, John Jordan.

Broadway, s e cor. Twenty-second St., five-st'y brick store, slate and tin roof; cost, $200,000; owner, Wm. Jay, et al., trustees, 48 Wall St.; architect, Chas. C. Haight; builders, Robinson & Wallace.

Third Ave., e s, 25′ n Sixty-second St., four-st'y brick and brownstone flat, tin roof; cost, $16,000; owner, Mrs. Elizabeth A. Albert, Hillsdale, N. Y.; architects, C. W. Romeyn & Co.; builders, J. & G. Ruddell.

Eighty-sixth St., n s, 257′ w Ave. A, 4 five-st'y brownstone front tenements, tin roofs; cost, $25,000; owner, Wm. Henderson, 511 East Eighty-second St.; architect, John C. Burne.

West Fifty-eighth St., No. 156, four-st'y brownstone front dwell., tin roof; cost, $30,000; owner, John Coar, 128 West Fifty-eighth St.; architects, Thom & Wilson; days' work.

One Hundred and Thirty-second St., n s, 150′ e Eighth Ave., 5 three-st'y brownstone front dwells., tin roofs; cost, each, $15,000; owner, Robert Lindsey, 2325 First Ave.; architect, J. H. Valentine; builder, John Hutchison.

Alterations.—*Maiden Lane, No.* 88, raise one-st'y, front wall rebuilt, and internal alterations; cost, $8,000; owner, Edward H. Kellog, 17 Cedar St.; architect, G. A. Schillinger.

Thirty-sixth St., n s, 150′ e Second Ave., raise one-st'y; cost, $12,000; owner, St. Gabriel's Church, Rev. Wm. H. Clowry, pastor; architect, Jos. M. Dunn; builders, Sanderson & Son and Jno. Murphy.

East Fifty-eighth St., No. 46, three-st'y and basement brick extension; cost, $10,000; owner, James D. Fish, 78 Broadway; architect, Ed. H. Kendall; builders, Warren A. Conover and A. G. Bogert & Bro.

Philadelphia.

Addition.—*Belmont Ave.*, cor Girard Ave., addition to "Home for Aged and Infirm Colored Persons," south wing 22′ x 87′, to be four stories, and fireproof; Addison Hutton, architect.

Churches.—The congregation of the Hebron Baptist Church propose to erect a church-building at Fifty-sixth St., cor. Vine St., to cost $60,000.

The First Reformed Church Congregation, having purchased a lot at Tenth St., cor. Wallace St., propose to erect thereon a church building, 54′ x 107′, to be built of Chester gray stone.

Building Permits.—*Forty-first St., No.* 505, three-st'y dwell., 21′ x 60′; Wm. M. Schenke.

Thirty-third St., s w cor. Haverford St., 6 two-st'y dwells., 16′ x 45′; Samuel Haag, contractor.

Twenty second St., n w cor. Master St., two-st'y factory, 14′ x 58′; D. Nunneviller, contractor.

Sixty-first St., s e cor. Lombard St., 2 two-st'y dwells., one with store, 20′ x 32′; Harry Pettit, contractor.

Vine St., n s, e of Fifty-fifth St., three-st'y store and dwell., 18′ x 44′; Harry Pettit, contractor.

Edgemont St., w s, n of Somerset St., two-st'y dwell., 30′ x 31′; Jno. Mitchell.

Orkney St., e s, n of Indiana Ave., two-st'y weave-shop, 32′ x 32′; Jas. W. Hampson, owner.

East Orthodox St., No. 250, two-st'y store, 16′ x 40′; Briggs & Bro., owners.

Twenty-ninth St., w s, s of Dauphin St., three-st'y dwell., 14′ x 35′; L. Paul, owner.

Silverton Ave., n s, 13 two-st'y dwells., 16′ x 42′, and *Atlanta St.*, s s, w from Thirty-eighth St., 15 two-st'y dwells., 14′ x 37′; F. L. Michaelson, owner.

Alleyheny Ave., s s, e of Fisher St., three-st'y dwell., 16′ x 50′; Sebastian Heim, contractor.

Frankford Road, No. 1542, three-st'y store and dwell., 16′ x 73′; Thos. E. Day, contractor.

Esher St., w s, n of Thompson St., 6 two-st'y dwells., 14′ x 36′; Jos. Sutton, contractor.

Ninth St., cor. York St., three-st'y dwell., 17′ x 52′, and three-st'y store, 16′ x 42′; Jno. Klebe, contractor.

Ripka Ave., n w s, above Washington St., three-st'y dwell., 17′ x 48′; Sturges & Heath, contractors.

Ripka Ave., s e s, between Hamilton and Mansion Aves., two-st'y dwell., 18′ x 40′; Sturges & Heath, contractors.

Green Lane, s e s, between Spring and Magnet Sts., three-st'y dwell., 17′ x 48′; Sturges & Heath, contractors.

Jefferson St., s e s, above Linden St., 2 two-st'y dwells., 17′ x 48′; Sturges & Heath, contractors.

West Huntingdon St., No. 162, two-st'y dwell., 14′ x 30′; Jacob Ebner, contractor.

Linden St., n e s, s e of Jefferson St., 2 two-st'y dwells., 18′ x 45′; Wm. Eddleman, contractor.

Fairhill St., w s, s of Huntingdon St., two-st'y shoe-shop, 16′ x 40′; Wm. Tecklenberg, contractor.

Twenty-fifth St., w s, s of Oxford St., 3 three-st'y dwells., 15′ x 52′; Jno. L. Carre, owner.

Van Pelt St., n e cor. Berks St., 6 three-st'y dwells., 16′ x 48′; J. L. Carre, owner.

Boudinot St., w s, between Somerset St. and Kensington Ave., three-st'y dwell., 16′ x 42′; Jno. Cunningham, contractor.

Belgrade St., w s, n of Capewell St., two-st'y dwell. and two-st'y shop; 17′ x 38′; J. S. Baldt, owner.

Kimball St., n s, w of Twenty-first St., 6 two-st'y dwells., 14′ x 27′; Robert Kaighn, contractor.

Salmon St., No. 1617, two-st'y dwell., 16′ x 32′; W. Chard, owner.

Tenth St., cor. Lemon St., 5 three-st'y dwells., two 17′ x 55′, three 14′ x 24′; Samuel Hart, contractor.

Tuslum St., s e cor. Kipp St., two-st'y dwell., 14′ x 28′; Thos. Badman, owner.

Locust St., below Sixteenth St., four-st'y dwell., 60′ x 60′; Benj. Ketcham & Son, contractors.

Huntingdon St., e of Trenton Ave., three-st'y addition, 70′ x 70′; Chas. Judge, contractor.

Christian St., e of Twenty-fourth St., 2 two-st'y dwells., 15′ x 46′; Chas. Lafferty, owner.

Warren St., Nos. 3904, 3906, 3908 *and* 3910, 4 two-st'y dwells., 14′ x 40′; Hartman Graw.

Philadelphia Almshouse, boiler-house, 52′ x 67′; G. L. Harvey, contractor.

North Fifth St., No 2557, two-st'y warehouse, 18′ x 32′; F. Hefling, contractor.

Amber St., n of Huntingdon St., 2 two-st'y dwells., 15′ x 34′; J. Mesorley, owner.

Gorgas Lane, between Main and Chew Sts., 2 three-st'y dwells., 18′ x 48′; Martin Hetzel, contractor.

Cherry St., s e cor. Margaretta St., three-st'y store and dwell., 16′ x 44′; A. H. Taylor, contractor.

Frankford Road, cor. Adaline St., 4 two-st'y dwells., 15′ x 42′; A. H. Taylor, contractor.